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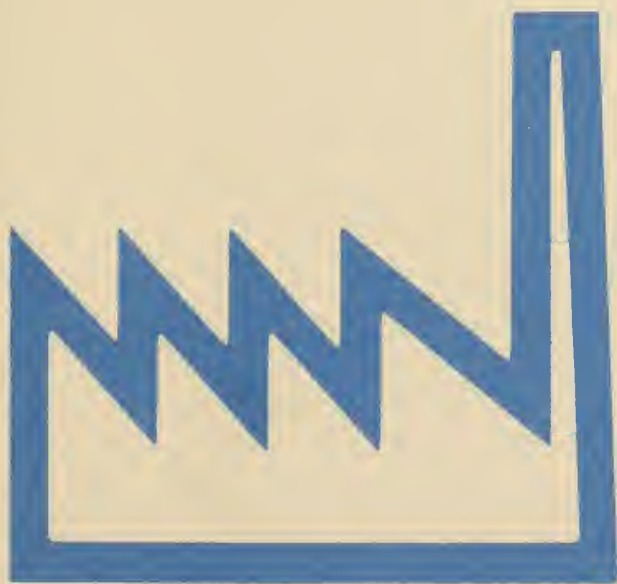
Census of Manufactures

MC82-I-24C

INDUSTRY SERIES

Wooden Containers and Miscellaneous Wood Products

Industries 2441, 2448, 2449, 2491, 2492, and 2499



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The publications
from the 1982 Economic and
Agriculture Censuses are dedicated
to the memory of Shirley Kallek,
Associate Director for Economic Fields.
During her career at the Bureau of the
Census (1955 to 1983), she continually
directed efforts to improve
the timeliness and accuracy of
economic statistics.

1982 Census of Manufactures

MC82-I-24C

INDUSTRY SERIES

Wooden Containers and Miscellaneous Wood Products

2441	Nailed Wood Boxes and Shook
2448	Wood Pallets and Skids
2449	Wood Containers, N.E.C.
2491	Wood Preserving
2492	Particleboard
2499	Wood Products, N.E.C.

Issued March 1985



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**Charles A. Waite, Associate Director for
Economic Fields**

**John H. Berry, Assistant Director for
Economic and Agriculture Censuses**

INDUSTRY DIVISION
Gaylord E. Worden, Chief

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INTRODUCTION

ECONOMIC CENSUSES OVER TIME

The early beginnings of America's industrial output were first measured in the United States in the 1810 Decennial Census and again in 1820, when questions on manufacturing were included with those for population. Beginning with the 1840 Decennial Census, there were enumerations of manufactures and mineral industries at 10-year intervals up to and including the year 1900 for manufactures and 1940 for mineral industries. The latter census was again taken for 1954, 1958, 1963, and 1967.

Because of the increasing dominance of manufacturing in the early 20th century, Congress directed that quinquennial censuses of manufactures be taken beginning in 1905. However, from 1919 through 1939, these censuses were conducted every 2 years. The need for war-related current surveys in the early 1940's postponed the next census of manufactures until 1948 (for 1947). That census was again taken for 1954, 1958, 1963, and 1967.

Retail and wholesale trade data were first collected in 1930, and in 1933 information on selected service industries was added to the data-collection operation. These business censuses, as they were called, were again taken for 1935, 1939 (as part of the 1940 decennial program), 1948, 1954, 1958, 1963, and 1967.

Information on construction industries was obtained first in 1930 and again for 1935 and 1939. Data for the full spectrum of construction industries were not gathered again until 1968 (for 1967).

The need for transportation data to supplement information available from existing governmental or private sources was recognized by Congress in the late 1950's and early 1960's. The census of transportation (consisting of several surveys) was taken first for 1963 and again for 1967.

Since 1967, all of the above censuses have been taken quinquennially as part of the Census Bureau's economic census program. (For the 1977 censuses, the coverage of the service industries was broadened from "selected services" to "all services, except religious organizations and private households." A total of 41 additional four-digit standard industrial classifications¹ (SIC's) in 7 SIC major groups was added to the scope of the census. While most of the industries included for the first time for 1977 were covered again for 1982, some were not, i.e., hospitals; elementary and secondary schools; colleges, universities, and professional schools; junior colleges and technical institutes; labor unions and similar labor organizations; and political organizations.)

The first manufacturing census for an outlying area was conducted in Puerto Rico for the year 1909. Thereafter, with the exception of 1929, a census was taken at 10-year intervals through 1949. The first censuses of retail trade, wholesale trade, and selected service industries in Puerto Rico were conducted for 1939. These censuses also were taken for the years 1949, 1954, 1958, 1963, and 1967. A census of construction industries was introduced first in Puerto Rico for 1967. These censuses of Puerto Rico have been taken since then for the years 1972, 1977, and 1982.

Censuses of manufactures, retail trade, wholesale trade, and selected service industries were conducted in Guam and the

Virgin Islands of the United States for 1958, 1963, 1967, 1972, 1977, and 1982. Censuses of mineral industries were taken in the Virgin Islands of the United States for the years 1958, 1963, and 1967 but not since that time. A census of construction industries was also undertaken in these areas for 1972, 1977, and 1982.

Retail trade, wholesale trade, selected service industries, manufacturing, and construction industries were canvassed for the first time in the Northern Mariana Islands in 1983 (for 1982).

For 1982, the economic censuses and agriculture censuses were conducted concurrently.

USES OF THE ECONOMIC CENSUSES

The economic censuses are the major source for facts about the structure and functioning of the Nation's economy and provide essential information for government, business, industry, and the general public. They provide an important part of the framework for such composite measures as the gross national product, input-output measures, indexes of industrial production, and indexes measuring productivity and price levels. Information from the censuses is used to establish sampling frames and as benchmarks for current surveys of business activity, which are essential for measuring short-term economic conditions.

State and local governments use census data to assess business activities within their jurisdictions. The private sector uses the data to forecast general economic conditions; analyze sales performance; lay out sales territories; allocate funds for advertising; decide on locations for new plants, warehouses, or stores; and measure potential markets in terms of size, geographic areas, kinds of business, and kinds of products made or sold.

Following every census, thousands of businesses and other users purchase reports. Likewise, census facts are disseminated widely by trade associations, business journals, and newspapers. Volumes containing census statistics are available in most major public and college libraries. All 1982 data are available on microfiche from the U.S. Government Printing Office and most data on computer tape from the Census Bureau. Finally, the more than 50 State Data Centers also are suppliers of economic census statistics.

AUTHORITY AND SCOPE OF THE ECONOMIC CENSUSES

The economic censuses are required by law under title 13 of the United States Code, sections 131, 191, and 224, which directs that they be taken at 5-year intervals for the years ending in 2 and 7. The 1982 Economic Censuses covered manufacturing, mining, construction industries, retail trade, wholesale trade, service industries, and selected transportation activities. Special programs also cover minority-owned and women-owned businesses. The next economic censuses are scheduled to be taken in 1988 for the year 1987.

¹Standard Industrial Classification Manual: 1972. For sale by Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Stock No. 041-001-00066-6. 1977 Supplement. Stock No. 003-00500176-0.

CENSUS OF MANUFACTURES

General

The 1982 Census of Manufactures is the 31st census of manufactures of the United States. For 1982, it was conducted jointly with the censuses of mineral industries, construction industries, retail and wholesale trades, service industries, selected transportation activities, and minority-owned and women-owned businesses.

This report, from the 1982 Census of Manufactures, is one of a series of 82 industry reports, each of which provides statistics for groups of related industries. Additional separate reports will be issued for each State and on special subjects, such as size of establishments, legal form of organization, and fuels and electric energy consumed.

These separate reports will subsequently be issued as portions of the final census volumes. Volume I, Subject Statistics, will show comparative statistics for industries, States, and standard metropolitan statistical areas. It also will show selected subjects, such as concentration ratios in manufacturing, selected materials consumed, manufacturing activity in government establishments, and water use in manufacturing. Volume II, Industry Statistics, will be a consolidation of reports for the 82 groups of industries showing the same information that is shown in this report. Volume III, Geographic Area Statistics, will contain establishment-based data (number of establishments, employment, payroll, value added by manufacture, and capital expenditures) for each State and its important standard metropolitan statistical areas, counties, and places, by industry groups and important individual industries. Totals for "all manufacturing" will be shown for counties and places with more than 450 manufacturing employees. The introduction to the final volumes will discuss, at greater length, many of the subjects described in this introduction. For example, the volume text will discuss the relationship of value added by manufacture to National income by industry of origin, the changes in statistical concepts over the history of the censuses, and the valuation problems arising from intracompany transfers between manufacturing plants of a company and between manufacturing plants and sales offices and sales branches of a company.

Scope of Census and Definition of Manufacturing Industries

The 1982 Census of Manufactures covers all establishments employing one person or more primarily engaged in manufacturing as defined in the 1972 Standard Industrial Classification (SIC) Manual and its 1977 Supplement.¹ This is the system of industrial classification developed over a period of years by experts on classification in government and private industry under the guidance of the Office of Management and Budget. This system of classification is in general use among government agencies as well as organizations outside the government.

The SIC manual defines manufacturing as the mechanical or chemical transformation of inorganic or organic substances into new products. The assembly of component parts of products is also considered to be manufacturing if the resulting product is neither a structure nor other fixed improvement. These activities are usually carried on in plants, factories, or mills that characteristically use power-driven machines and materials handling equipment.

¹Standard Industrial Classification Manual: 1972. For sale by Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Stock No. 041-001-00066-6. 1977 Supplement. Stock No. 003-00500176-0.

IV INTRODUCTION

Manufacturing production is usually carried on for the wholesale market, for transfers to other plants of the same company, or to the order of industrial users rather than for direct sale to the household consumer. Some manufacturers in a few industries sell chiefly at retail to household consumers through the mail, through house-to-house routes, or through salespersons. Some activities of a service nature (enameling, engraving, etc.) are included in manufacturing when they are performed primarily for the trade. They are considered nonmanufacturing when they are performed primarily to the order of the household consumer.

Relationship Between Annual Survey of Manufactures and Census of Manufactures

The Bureau of the Census conducts the annual survey of manufactures (ASM) in each of the 4 years between the censuses of manufactures. The ASM is based on a scientifically selected sample of approximately 55,000 establishments and collects the same industry statistics (employment, payroll, value of shipments, etc.) as the census of manufactures. In addition to collecting the information normally requested on the census form, the establishments in the ASM sample are requested to supply detailed information on assets, capital expenditures, retirements, depreciation, rental payments, supplemental labor costs, and costs of purchased services.

Establishment Basis of Reporting

The census of manufactures and the annual survey of manufactures are conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1982, as in earlier years, a minimum size limit was set for including establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

This report excludes information for separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company (see Auxiliaries).

Manufacturing Universe and Census Report Forms

The 1982 Census of Manufactures universe includes approximately 345,000 establishments. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures. The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in this publication are described below.

1. Small Single-Unit Companies Not Sent a Report Form

In the 1982 Census of Manufactures, approximately 140,000 small single-establishment companies were excluded from filing reports. Selection of these small

establishments was done on an industry-by-industry basis and was based on annual payroll and total shipments data as well as on the industry classification codes contained in the administrative records of other Federal agencies. The cutoffs were selected so that these administrative records cases would account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed report forms.

Information on the physical location of the establishment, as well as information on payrolls, receipts (shipments), and industry classification, was obtained from the administrative records of other Federal agencies under special arrangements, which safeguarded their confidentiality. Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these establishments but were included in the product and material "not specified by kind" (n.s.k.) categories.

The industry classification codes included in the administrative records files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to the four-digit SIC level. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes these administrative record cases were given only a two- or three-digit SIC group. For the 1982 Census of Manufactures, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the four-digit SIC level. Establishments that did not return the classification form were coded later to those four-digit SIC industries identified as "not elsewhere classified" (n.e.c.) within the given two- or three-digit industry groups.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassifications have no significant effect on the statistics other than on the number of establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments Sent a Report Form

The 205,000 establishments covered in the mail canvass were divided into three groups:

a. ASM sample establishments—This group consisted of approximately 55,000 establishments covering all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size (see appendix, Annual Survey of Manufactures).

In a census of manufactures year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll,

and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply information on assets, capital expenditures, retirements, depreciation, rental payments, supplemental labor costs, and costs of purchased services. Results of the ASM inquiries are included in tables 3c and 3d of this report.

The census part of the report form is one of approximately 200 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the approximately 450 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries, as well as secondary products and miscellaneous services that establishments classified in these industries were likely to be performing. Respondents were requested to identify the products, the value of each product, and, in a large number of cases, the quantity of the product shipped during the survey year. Space was also provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry, which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

Finally, a wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM)—

Approximately 100,000 establishments were included in this group. A variable cutoff, based on administrative records payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive one of the approximately 200 census of manufactures regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-unit establishments (non-ASM)—

This group consisted of approximately 50,000 establishments. For those industries where application of the variable cutoff for administrative records cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or "short" form was used. These establishments received one of the approximately 80 versions of the short form, which requested summary product and material data and totals but no details on employment, payrolls, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics; the same

data were collected on the short as well as the long form. However, detailed information on materials consumed was not collected on the short form; thus its use would increase the values of the n.s.k. categories.

Auxiliaries

In this industry report, the data on employment and payroll are limited to operating manufacturing establishments. The census report form filed for auxiliaries (ES-9200) requested a description of the activity of the establishments serviced. However, the auxiliaries were coded only to the two-digit major group of the establishments they served; whereas, the operating establishments were coded to a four-digit manufacturing industry. Data for the approximately 10,000 separately operated auxiliaries are included in the paperbound geographic area series, the bound volumes of the census of manufactures, and in a report issued as part of the 1982 Enterprise Statistics survey.

Auxiliaries are establishments whose employees are primarily engaged in performing supporting services for other establishments of the same company, rather than for the general public or for other business firms. They can be at different locations from the establishments served or at the same location as one of those establishments but not operating as an integral part thereof and serving two or more establishments. Where auxiliary operations are conducted at the same location as the manufacturing operation and operate as an integral part thereof, they usually are included in the report for the operating manufacturing establishment.

Included in the broad category of auxiliaries are administrative offices. Employees in administrative offices are concerned with the general management of multiestablishment companies, i.e., with the general supervision and control of two units or more, such as manufacturing plants, mines, sales branches, or stores. The functions of these employees may include (1) program planning, including sales research and coordination of purchasing, production, and distribution; (2) company purchasing, including general contracts and purchasing methods; (3) company financial policy and accounting, tax accounting, company sales and profit reports, and personnel accounting; (4) general engineering, including design of product machinery and equipment, and direction of engineering effort conducted at the individual operation locations; (5) direction of company personnel matters; and (6) legal and patent matters.

Other types of auxiliaries serving the plants or central management of the company include purchasing offices, sales promotion offices, research and development organizations, etc.

Industry Classification of Establishments

Each of the establishments covered in the census was classified in one of approximately 450 manufacturing industries in accordance with the industry definitions in the SIC system. Under this system of classification, an industry is generally defined as a group of establishments producing a single product or a closely related group of products. The product groupings from which industry classifications are derived are based on considerations such as similarity of manufacturing processes, types of materials used, types of customers, and the like. The resulting group of plants must be significant in terms of its number, value added by manufacture, value of shipments, and number of employees. The system operates in such a way that the definitions progressively became narrower with successive additions of numerical digits. There are 20 major groups (two-digit SIC), 143 industry groups (three-digit SIC), and approximately 450

industries (four-digit SIC). The product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. There are about 1,500 classes of products, identified by a five-digit code, and about 11,000 products, identified by a seven-digit code. The seven-digit products are considered the primary products of the industry with the same four digits.

Accordingly, an establishment is usually classified in a particular industry on the basis of its major activity during a particular year, i.e., production of the products primary to that industry exceeds, in value, production of the products primary to any other single industry. In a few instances, however, the industry classification of an establishment is not only determined by the products it makes but also by the process employed in making those products. For example, establishments engaged in blast furnace operations, refining of nonferrous metals from ore, or rolling and drawing of nonferrous metals (processes which involve heavy capitalization in specialized equipment) would be classified according to the process used during a census year. These establishments then would be "frozen" in that industry during the following ASM years.

In either a census or ASM year, establishments included in the ASM sample with certainty weight, other than those involved with heavily capitalized activities described above, are reclassified by industry only if the change in the primary activity from the prior year is significant or the change has occurred for two successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year (see appendix, Annual Survey of Manufactures). However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The result of these rules covering the switching of plants from one industry classification to another is that, at the aggregate level, some industries comprise different mixes of establishments between survey years, and establishment data for such industry statistics as employment and payroll may be tabulated in different industries between survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the four-digit SIC level, should be viewed with caution. This is true particularly for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of establishments.

While some establishments produce only the primary products of the industry in which they are classified, all establishments of an industry rarely specialize to this extent. The industry statistics (employment, inventories, value added by manufacture, total value of shipments including resales and miscellaneous receipts, etc.) shown in tables 1a through 5a, therefore, reflect not only the primary activities of the establishments in that industry but also their secondary activities. The product statistics in tables 6a through 6c represent the output of all establishments whether or not they are classified in the same industry as the product. For this reason, in relating the industry statistics, especially the value of shipments to the product statistics, the

composition of the industry's output shown in table 5b should be considered.

The extent to which industry and product statistics may be matched with each other is measured by two ratios, which are computed from the figures shown in table 5b. The first of these ratios, called the primary product specialization ratio, measures the proportion of product shipments (both primary and secondary) of the establishments classified in the industry represented by the primary products of those establishments. The second ratio, called the coverage ratio, is the proportion of primary products shipped by the establishments classified in the industry to total shipments of such products by all manufacturing establishments.

However, establishments making products falling into the same industry category may use a variety of processes and materials to produce them. Also, the same industry classification (based on end products) may include both establishments that are highly integrated and those that put only the finishing touches on an already highly fabricated item. For example, the refrigeration industry includes instances of almost complete integration (production of the compressor, condensing unit, electric motor, casting, stamping of the case, and final assembly) all carried on at one plant. On the other hand, the condensing unit, the motor, and the case may be purchased and only assembled into the finished product.

In some instances, separate industry categories have been established for integrated and nonintegrated establishments. For other industries, the census provides separate statistics on the production of intermediate commodities made and used in the producing plant. For some industries characterized by many plants of the same company, separate figures on interplant transfer of products usually are shown.

Differences in the integration of production processes, types of operations, and alternatives in types of materials used should be considered when relating the industry statistics (employment, payrolls, value added, etc.) to the product and material data.

Value of Shipments for the Industry Compared With Value of Product Shipments

This industry report shows value of shipments data for industries and products. In tables 1a through 5a, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Product shipments shown in table 6a represent the total value of shipments of products classified as primary to an industry that were shipped by all manufacturing establishments regardless of their industry classification.

CENSUS DISCLOSURE RULES

In accordance with Federal law governing census reports, no data are published that would disclose the data for an individual establishment or company. However, the number of establishments classified in a specific industry is not considered a disclosure, so this item may be given even though other information is withheld.

The disclosure analysis for the industry statistics in tables 1a through 5a of this report is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line has been suppressed. However, the suppressed data are included in higher level totals. Additional disclosure analysis is performed for new capital expenditures that can be suppressed even though value of shipments data are publishable.

MICROFICHE AND COMPUTER TAPES

All the data in this report are available on microfiche. Selected data are also available on computer tape.

In addition to selected published data being on computer tape, one major data series, the location of manufacturing plants, will be available only on computer tape. This series presents the number of establishments by employment size class by four-digit SIC industry codes for States, counties, and places of 2,500 inhabitants or more. These data are available for both State and county by industry, and State and place by industry.

Microfiche reports are sold by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Computer tapes are sold by the Data User Services Division, Customer Services (Tapes), Bureau of the Census, Washington, D.C. 20233.

SPECIAL TABULATIONS

Special tabulations of data collected in the 1982 Census of Manufactures may be obtained on computer tape or in tabular form. The data will be in summary form and subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) as are the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief, Industry Division, Bureau of the Census, Washington, D.C. 20233.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used in this publication:

- Represents zero.
- (D) Withheld to avoid disclosing data for individual companies; data are included in higher level totals.
- (NA) Not available.
- (NC) Not comparable.
- (S) Withheld because estimate did not meet publication standards on the basis of either the response rate or a consistency review.
- (X) Not applicable.
- (Z) Less than half the unit shown.
- n.e.c. Not elsewhere classified.
- n.s.k. Not specified by kind.
- pt. Part.
- r Revised.
- SIC Standard Industrial Classification.

Other abbreviations, such as lb, gal, yd, doz, bbl, and s tons, are used in the customary sense.

Users' Guide for Locating Statistics

[For explanation of terms, see appendixes]

	Item	Four-digit industry statistics		
		Historical	Operating ratios	By geographic area
1	Number of companies	1a		
2	Number of manufacturing establishments	1a		2
	Employment and payroll:			
3	Number of employees	1a	1b	2
4	Payroll	1a	1b	2
5	Supplemental labor costs			
6	Production workers	1a	1b	2
7	Production-worker hours	1a	1b	2
8	Production-worker wages	1a	1b	2
	Shipments, cost of materials, and value added:			
9	Value of shipments (four-digit)	1a	1b	2
10	Product class shipments (five-digit)			
11	Product shipments (seven-digit)			
12	Value added by manufacture	1a	1b	2
13	Cost of materials	1a	1b	2
14	Fuels and electric energy			
15	Materials consumed by kind			
	Inventories:			
16	Total, end of year	1a		
17	By method of valuation			
18	By stage of fabrication			
	Capital expenditures, assets, rental payments, and purchased services:			
19	New capital expenditures	1a		2
20	Used plant and equipment expenditures			
21	Gross assets			
22	Depreciation			
23	Retirements of buildings and machinery			
24	Rental payments			
25	Purchased services			
	Ratios:			
26	Specialization	1a		
27	Coverage	1a		

*Number of companies with shipments of over \$100 thousand.

**Detailed information shown.

in This Report by Table Number

Four-digit industry statistics—Con.				Five-digit product class and seven-digit product statistics				
Summary and supplemental	By employment size	By industry and product class specialization	Materials consumed by kind	Industry-product analysis	Product shipments	Product class by geographic area	Historical product class	
3a					*6a			1
**3a	4	5a						2
3a	4	5a						3
3a	4	5a						4
**3d								5
**3a	4	5a						6
**3a	4	5a						7
3a	4	5a						8
3a	4	5a		5b, 5c 5b, 5c	6a 6a	6b	6c	9
3a	4	5a						10
**3a	4	5a						11
3a, 3d			7					12
								13
								14
								15
3b, 3c	4							16
3b, 3c								17
3b								18
**3a, **3d	4	5a						19
**3a, **3d								20
**3d								21
**3d								22
**3d								23
**3d								24
**3d								25
3a				5b				26
3a				5b				27



Wooden Containers and Miscellaneous Wood Products

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DESCRIPTION OF INDUSTRIES AND SUMMARY OF FINDINGS

WOODEN CONTAINERS AND MISCELLANEOUS WOOD PRODUCTS

This report shows 1982 Census of Manufactures statistics for establishments classified in each of the following industries:

SIC Code and Title

2441	Nailed Wood Boxes and Shook
2448	Wood Pallets and Skids
2449	Wood Containers, N.E.C.
2491	Wood Preserving
2492	Particleboard
2499	Wood Products, N.E.C.

The industry statistics (employment, payroll, cost of materials, value of shipments, inventories, etc.) are reported for each establishment as a whole. Aggregates of such data for an industry reflect not only the primary activities of the establishments but also their activities in the manufacture of secondary products as well as their miscellaneous activities (contract work on materials owned by others, repair work, etc.). This fact should be taken into account in comparing industry statistics (tables 1a-5a) with product statistics (table 6a) showing shipments by all industries of the primary products of the specified industry. The extent of the "product mix" is indicated in table 5b, which shows the value of primary and secondary products shipped by establishments classified in the specified industry and the value of primary products of the industry shipped as secondary products by establishments classified in other industries.

Small single-unit companies with up to 20 employees (cutoff varied by industry) were excluded from the mail portion of the census. For these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated), data on payrolls and receipts were obtained from administrative records of other government agencies. The remaining statistics were developed from industry averages.

Establishment data were tabulated based on industry definitions contained in the 1972 Standard Industrial Classification (SIC) Manual and its 1977 supplement.¹

INDUSTRY 2441, NAILED WOOD BOXES AND SHOOK

This industry comprises establishments primarily engaged in the manufacture of nailed and lock-corner wood boxes (lumber or plywood) and which may also produce shook for nailed and lock-corner boxes.

In the 1982 Census of Manufactures, Industry 2441, Nailed Wood Boxes and Shook, recorded employment of 6.4 thousand. The total value of shipments for establishments classified in this industry was \$307 million.

The value of shipments figure shown above is in current (1982) prices. All dollar figures included in this report are at prices current for the year specified and, therefore, unadjusted for changes in price levels. Consequently, when making comparisons to prior years, users should take into consideration the inflation that has occurred.

The employment figure shown above was 26 percent below the 8.6 thousand reported in 1977. The leading States in employment in 1982 were California, Washington, Texas, and North Carolina, accounting for 42 percent of the industry's 1982 employment. This represents a shift from 1977 when California, Texas, Pennsylvania, and Washington accounted for approximately 40 percent of the industry's employment.

Compared with 1981, employment decreased 4 percent. The 1981 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

Establishments in virtually all industries ship secondary products as well as products primary to the industry to which they are classified and have some miscellaneous receipts, such as resales and contract receipts. In current prices, industry 2441 shipped \$254 million of products primary to the industry, \$30 million of secondary products, and had \$23 million of miscellaneous receipts. Thus, the ratio of primary products to the total of both secondary and primary products shipped by establishments in the industry was 90 percent (specialization ratio). In 1977, this specialization ratio was 89 percent.

Establishments in this industry also accounted for 81 percent of products considered primary to the industry no matter where they actually were produced (coverage ratio). In 1977, the coverage ratio was 83 percent. The products primary to industry 2441, no matter in what industry they were produced, appear in table 6a and aggregate to \$315 million in current prices.

The total cost of materials and services used by establishments classified in the nailed wood boxes and shook industry amounted to \$167 million in current prices. Data on specific materials consumed appear in table 7.

Establishments of single-unit companies in this industry with up to 5 employees were excluded from the mail portion of the census. The data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for 30 percent of total value of shipments.

INDUSTRY 2448, WOOD PALLETS AND SKIDS

This industry comprises establishments primarily engaged in the manufacture of wood and wood-metal combination pallets

¹Standard Industrial Classification Manual: 1972. For sale by Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Stock No. 041-001-00066-6. 1977 Supplement. Stock No. 003-005-00176-0.

and skids. Establishments primarily engaged in the manufacture of metal pallets are classified in industry 3537.

In the 1982 Census of Manufactures, Industry 2448, Wood Pallets and Skids, recorded employment of 22.1 thousand. The total value of shipments for establishments classified in this industry was \$1.0 billion.

The value of shipments figure shown above is in current (1982) prices. All dollar figures included in this report are at prices current for the year specified and, therefore, unadjusted for changes in price levels. Consequently, when making comparisons to prior years, users should take into consideration the inflation that has occurred.

The employment figure shown above was 9 percent above the 20.3 thousand reported in 1977. The leading States in employment in 1982 were California, Ohio, Pennsylvania, and Michigan, accounting for 26 percent of the industry's 1982 employment. These same States were the leaders in 1977, when they accounted for approximately 30 percent of the industry's employment, although there has been some shift in the relative importance of individual States.

Compared with 1981, employment decreased 3 percent. The 1981 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

Establishments in virtually all industries ship secondary products as well as products primary to the industry to which they are classified and have some miscellaneous receipts, such as resales and contract receipts. In current prices, industry 2448 shipped \$905 million of products primary to the industry, \$74 million of secondary products, and had \$34 million of miscellaneous receipts. Thus, the ratio of primary products to the total of both secondary and primary products shipped by establishments in the industry was 92 percent (specialization ratio). In 1977, this specialization ratio was 90 percent.

Establishments in this industry also accounted for 93 percent of products considered primary to the industry no matter where they actually were produced (coverage ratio). In 1977, the coverage ratio was 91 percent. The products primary to industry 2448, no matter in what industry they were produced, appear in table 6a and aggregate to \$970 million in current prices.

The total cost of materials and services used by establishments classified in the wood pallets and skids industry amounted to \$589 million in current prices. Data on specific materials consumed appear in table 7.

Establishments of single-unit companies in this industry with up to 5 employees were excluded from the mail portion of the census. The data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for 33 percent of total value of shipments.

INDUSTRY 2449, WOOD CONTAINERS, N.E.C.

This industry comprises establishments primarily engaged in the manufacture of wood containers, not elsewhere classified, such as cooperage, wirebound boxes and crates, and other veneer and plywood containers. Establishments primarily engaged in the manufacture of tobacco hogshead stock are classified in industry 2421, and those in the manufacture of cooperage stock in industry 2429.

In the 1982 Census of Manufactures, Industry 2449, Wood Containers, N.E.C., recorded employment of 7.4 thousand. The total value of shipments for establishments classified in this industry was \$316 million.

The value of shipments figure shown above is in current (1982) prices. All dollar figures included in this report are at prices current for the year specified and, therefore, unadjusted for changes in price levels. Consequently, when making comparisons to prior years, users should take into consideration the inflation that has occurred.

The employment figure shown above was 17 percent below the 8.9 thousand reported in 1977. The leading States in employment in 1982 were North Carolina, Georgia, Kentucky, and Tennessee, accounting for approximately 40 percent of the industry's 1982 employment. Data for Georgia have been withheld to avoid disclosing data for individual companies. This represents a shift from 1977 when Georgia, North Carolina, Kentucky, and Florida accounted for approximately 38 percent of the industry's employment.

Compared with 1981, employment decreased 14 percent. The 1981 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

Establishments in virtually all industries ship secondary products as well as products primary to the industry to which they are classified and have some miscellaneous receipts, such as resales and contract receipts. In current prices, industry 2449 shipped \$286 million of products primary to the industry, \$15 million of secondary products, and had \$14 million of miscellaneous receipts. Thus, the ratio of primary products to the total of both secondary and primary products shipped by establishments in the industry was 95 percent (specialization ratio). In 1977, this specialization ratio was 93 percent.

Establishments in this industry also accounted for 97 percent of products considered primary to the industry no matter where they actually were produced (coverage ratio). In 1977, the coverage ratio also was 97 percent. The products primary to industry 2449, no matter in what industry they were produced, appear in table 6a and aggregate to \$296 million in current prices.

The total cost of materials and services used by establishments classified in the wood containers, n.e.c., industry amounted to \$169 million in current prices. Data on specific materials consumed appear in table 7.

Establishments of single-unit companies in this industry with up to 5 employees were excluded from the mail portion of the census. The data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for 27 percent of total value of shipments.

INDUSTRY 2491, WOOD PRESERVING

This industry comprises establishments primarily engaged in the treating of wood, sawed or planed in other establishments, with creosote or other preservatives to prevent decay and to protect against fire and insects. This industry also includes the cutting, treating, and selling of poles, posts, and piling, but establishments primarily engaged in the manufacture of other wood products, which they may also treat with preservatives, are not included.

In the 1982 Census of Manufactures, Industry 2491, Wood Preserving, recorded employment of 10.9 thousand. The total value of shipments for establishments classified in this industry was \$1.4 billion.

The value of shipments figure shown above is in current (1982) prices. All dollar figures included in this report are at prices current for the year specified and, therefore, unadjusted for changes in price levels. Consequently, when making comparisons to prior years, users should take into consideration the inflation that has occurred.

The employment figure shown above was 13 percent below the 12.6 thousand reported in 1977. The leading States in employment in 1982 were Georgia, Texas, Alabama, and Mississippi, accounting for approximately 30 percent of the industry's 1982 employment. Data for Texas and Mississippi have been withheld to avoid disclosing data for individual companies. These same States were the leaders in 1977, when they accounted for approximately 30 percent of the industry's employment, although there has been some shift in the relative importance of individual States.

Compared with 1981, employment decreased 11 percent. The 1981 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

Establishments in virtually all industries ship secondary products as well as products primary to the industry to which they are classified and have some miscellaneous receipts, such as resales and contract receipts. In current prices, industry 2491 shipped \$1.3 billion of products primary to the industry, \$27 million of secondary products, and had \$64 million of miscellaneous receipts. Thus, the ratio of primary products to the total of both secondary and primary products shipped by establishments in the industry was 98 percent (specialization ratio). In 1977, this specialization ratio was 97 percent.

Establishments in this industry also accounted for 96 percent of products considered primary to the industry no matter where they actually were produced (coverage ratio). In 1977, the coverage ratio was 97 percent. The products primary to industry 2491, no matter in what industry they were produced, appear in table 6a and aggregate to \$1.3 billion in current prices.

The total cost of materials and services used by establishments classified in the wood preserving industry amounted to \$979 million in current prices. Data on specific materials consumed appear in table 7.

Establishments of single-unit companies in this industry with up to 5 employees were excluded from the mail portion of the census. The data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for 18 percent of total value of shipments.

INDUSTRY 2492, PARTICLEBOARD

This industry comprises establishments primarily engaged in the manufacture of wood panel products from small wood particles. This includes preparation of small particles of wood, drying, mixing with synthetic resin binder, and compressing. Pressing may take place in hydraulic presses with heated platens or by extrusion.

In the 1982 Census of Manufactures, Industry 2492, Particleboard, recorded employment of 5.6 thousand. The total value of shipments for establishments classified in this industry was \$547 million.

The value of shipments figure shown above is in current (1982) prices. All dollar figures included in this report are at prices current for the year specified and, therefore, unadjusted for changes in price levels. Consequently, when making comparisons to prior years, users should take into consideration the inflation that has occurred.

The employment figure shown above was 10 percent below the 6.2 thousand reported in 1977. The leading States in employment in 1982 were Oregon, Virginia, and Mississippi, accounting for approximately 40 percent of the industry's 1982 employment. Data for Mississippi have been withheld to avoid disclosing data for individual companies. These same States were the leaders in 1977, when they accounted for approximately 50 percent of the industry's employment.

Compared with 1981, employment increased 10 percent. The 1981 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

Establishments in virtually all industries ship secondary products as well as products primary to the industry to which they are classified and have some miscellaneous receipts, such as resales and contract receipts. In current prices, industry 2492 shipped \$529 million of products primary to the industry, \$14 million of secondary products, and had \$5 million of miscellaneous receipts. Thus, the ratio of primary products to the total of both secondary and primary products shipped by establishments in the industry was 97 percent (specialization ratio). In 1977, this specialization ratio was 99 percent.

Establishments in this industry also accounted for 96 percent of products considered primary to the industry no matter where they actually were produced (coverage ratio). In 1977, the coverage ratio was 95 percent. The products primary to industry 2492, no matter in what industry they were produced, appear in table 6a and aggregate to \$554 million in current prices.

The total cost of materials and services used by establishments classified in the particleboard industry amounted to \$344 million in current prices. Data on specific materials consumed appear in table 7.

No establishments in this industry were excluded from the mail portion of the census. The data for a small number of establishments whose reports were not received at the time the data were tabulated were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for 3 percent of total value of shipments.

INDUSTRY 2499, WOOD PRODUCTS, N.E.C.

This industry comprises establishments primarily engaged in the turning and shaping of wood, and the manufacture of miscellaneous wood products, not elsewhere classified, from rattan, reed, splint, straw, veneer, veneer strips, wicker, and willow. This industry also includes establishments manufacturing lasts and related products, cork products, hardboard, and wood or metal mirror and picture frames. Establishments primarily engaged in the manufacture of particleboard are classified in industry 2492, and those manufacturing pallets and skids in industry 2448.

In the 1982 Census of Manufactures, Industry 2499, Wood Products, N.E.C., recorded employment of 60.6 thousand. The total value of shipments for establishments classified in this industry was \$3.3 billion.

The value of shipments figure shown above is in current (1982) prices. All dollar figures included in this report are at prices current for the year specified and, therefore, unadjusted for changes in price levels. Consequently, when making comparisons to prior years, users should take into consideration the inflation that has occurred.

The employment figure shown above was 6 percent below the 64.6 thousand reported in 1977. The leading States in employment in 1982 were California, North Carolina, Illinois, and New York, accounting for 33 percent of the industry's 1982 employment. This represents a shift from 1977 when California, Illinois, North Carolina, and Mississippi accounted for approximately 30 percent of the industry's employment.

Compared with 1981, employment decreased 1 percent. The 1981 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

Establishments in virtually all industries ship secondary products as well as products primary to the industry to which they are classified and have some miscellaneous receipts, such as

resales and contract receipts. In current prices, industry 2499 shipped \$3.1 billion of products primary to the industry, \$166 million of secondary products, and had \$93 million of miscellaneous receipts. Thus, the ratio of primary products to the total of both secondary and primary products shipped by establishments in the industry was 95 percent (specialization ratio). In 1977, this specialization ratio was 94 percent.

Establishments in this industry also accounted for 94 percent of products considered primary to the industry no matter where they actually were produced (coverage ratio). In 1977, the coverage ratio was 93 percent. The products primary to industry 2499, no matter in what industry they were produced, appear in table 6a and aggregate to \$3.3 billion in current prices.

The total cost of materials and services used by establishments classified in the wood products, n.e.c., industry amounted to \$1.7 billion in current prices. Data on specific materials consumed appear in table 7.

Establishments of single-unit companies in this industry with up to 5 employees were excluded from the mail portion of the census. The data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for 22 percent of total value of shipments.

Table 1a. Historical Statistics for the Industry: 1982 and Earlier Years

[Excludes data for auxiliaries. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Year ¹	All establishments ³			All employees		Production workers			Value added by manufacture ⁴ (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	End-of-year inventories ⁴ (million dollars)	Ratios		
	Companies ² (no.)	Total (no.)	With 20 employees or more (no.)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)						Specialization (per cent)	Coverage (per cent)	
	INDUSTRY 2441, NAILED WOOD BOXES AND SHOOK															
1982 Census.....	332	338	90	6.4	76.5	5.3	9.4	56.0	137.9	166.7	306.8	6.9	29.9	90	81	
1981 ASM.....	(NA)	(NA)	(NA)	6.7	63.7	5.5	10.2	46.1	104.7	128.7	235.7	5.2	23.8	(NA)	(NA)	
1980 ASM.....	(NA)	(NA)	(NA)	7.8	70.8	6.5	11.8	51.6	127.8	157.1	283.3	⁵ 5.6	29.8	(NA)	(NA)	
1979 ASM.....	(NA)	(NA)	(NA)	8.9	74.1	7.4	13.4	55.5	118.7	179.0	296.9	⁵ 4.8	33.6	(NA)	(NA)	
1978 ASM.....	(NA)	(NA)	(NA)	9.2	78.9	8.0	14.8	58.7	116.8	176.9	297.4	⁵ 9.4	33.0	(NA)	(NA)	
1977 Census.....	391	396	110	8.6	68.6	7.5	13.7	53.6	116.2	147.4	263.3	5.4	31.2	89	83	
1976 ASM.....	(NA)	(NA)	(NA)	8.3	62.1	7.1	12.3	47.2	112.0	125.0	235.9	6.6	27.6	(NA)	(NA)	
1975 ASM ⁷	(NA)	(NA)	(NA)	7.2	50.6	6.0	10.6	37.4	94.7	106.6	205.7	7.1	27.1	(NA)	(NA)	
1974 ASM.....	(NA)	(NA)	(NA)	9.7	64.1	8.5	15.5	50.6	129.3	133.4	262.3	⁵ 4.8	31.5	(NA)	(NA)	
1973 ASM.....	(NA)	(NA)	(NA)	9.5	58.4	8.4	15.5	45.7	96.7	114.1	210.0	⁵ 6.6	27.4	(NA)	(NA)	
1972 Census.....	424	436	130	10.7	61.1	9.5	18.4	49.0	103.8	136.3	237.9	6.4	26.1	88	87	
1971 ASM.....	(NA)	(NA)	(NA)	8.7	50.0	7.7	14.2	39.0	85.9	123.7	208.3	4.8	27.3	(NA)	(NA)	
1970 ASM ⁷	(NA)	(NA)	(NA)	10.8	57.9	9.5	18.0	45.1	86.6	137.8	223.9	6.1	25.9	(NA)	(NA)	
1969 ASM ⁷	(NA)	(NA)	(NA)	14.9	69.5	13.8	26.5	57.7	130.6	168.8	303.4	8.2	35.3	(NA)	(NA)	
1968 ASM ⁷	(NA)	(NA)	(NA)	15.5	72.5	14.2	27.6	60.1	134.9	170.4	308.2	7.8	32.6	(NA)	(NA)	
1967 Census.....	567	596	182	15.9	70.9	14.4	27.8	56.9	123.0	151.7	273.8	5.0	31.4	88	87	
	INDUSTRY 2448, WOOD PALLETS AND SKIDS ⁶															
1982 Census.....	1 642	1 677	362	22.1	230.4	18.4	32.7	165.0	420.5	589.1	1 012.3	29.4	104.3	92	93	
1981 ASM.....	(NA)	(NA)	(NA)	22.7	237.7	19.4	35.6	178.0	425.0	549.2	974.1	⁵ 39.9	89.8	(NA)	(NA)	
1980 ASM.....	(NA)	(NA)	(NA)	22.9	220.2	19.7	36.2	162.9	438.6	595.5	1 029.7	⁵ 26.7	88.1	(NA)	(NA)	
1979 ASM.....	(NA)	(NA)	(NA)	24.6	220.7	21.7	40.3	168.2	398.3	606.5	1 001.2	⁵ 35.6	83.5	(NA)	(NA)	
1978 ASM.....	(NA)	(NA)	(NA)	23.2	205.5	20.6	38.9	157.2	383.9	548.8	936.0	54.7	42.6	(NA)	(NA)	
1977 Census.....	1 267	1 290	348	20.3	163.8	17.9	32.1	126.3	303.1	397.3	698.0	21.3	58.1	90	91	
1976 ASM.....	(NA)	(NA)	(NA)	13.1	107.9	11.4	20.1	83.1	239.5	256.6	493.4	13.3	37.1	(NA)	(NA)	
1975 ASM ⁷	(NA)	(NA)	(NA)	13.0	107.0	11.1	19.0	80.0	223.3	247.6	475.1	19.6	35.9	(NA)	(NA)	
1974 ASM.....	(NA)	(NA)	(NA)	15.7	108.8	13.7	24.9	82.6	262.8	262.4	521.3	⁵ 20.5	38.6	(NA)	(NA)	
1973 ASM.....	(NA)	(NA)	(NA)	17.1	95.4	14.7	26.5	71.5	205.8	234.0	437.6	14.9	30.3	(NA)	(NA)	
1972 Census.....	444	456	271	14.3	77.7	12.5	23.1	60.3	140.9	155.2	295.4	11.2	17.2	91	88	
	INDUSTRY 2449, WOOD CONTAINERS, N.E.C. ⁶															
1982 Census.....	216	235	72	7.4	84.0	6.5	12.5	65.9	144.6	168.8	315.8	3.7	57.2	95	97	
1981 ASM.....	(NA)	(NA)	(NA)	8.6	91.0	7.7	14.8	71.5	168.1	196.4	366.1	3.1	72.9	(NA)	(NA)	
1980 ASM.....	(NA)	(NA)	(NA)	9.5	87.3	8.4	14.8	68.8	144.2	187.4	327.8	2.8	68.5	(NA)	(NA)	
1979 ASM.....	(NA)	(NA)	(NA)	8.9	77.9	8.0	15.9	62.4	122.1	170.9	286.8	⁵ 7.0	51.0	(NA)	(NA)	
1978 ASM.....	(NA)	(NA)	(NA)	8.8	72.0	7.9	14.8	57.8	132.2	157.1	291.0	⁵ 7.3	43.3	(NA)	(NA)	
1977 Census.....	239	263	82	8.9	67.2	8.0	15.5	53.7	120.4	134.4	255.8	2.9	50.5	93	97	
1976 ASM.....	(NA)	(NA)	(NA)	11.3	80.8	10.3	19.5	66.1	160.7	154.3	311.0	3.2	49.1	(NA)	(NA)	
1975 ASM.....	(NA)	(NA)	(NA)	11.3	75.8	10.3	19.6	61.9	154.3	152.5	303.0	⁵ 9.9	47.3	(NA)	(NA)	
1974 ASM.....	(NA)	(NA)	(NA)	12.5	76.9	11.4	23.2	63.8	159.2	161.6	316.4	⁵ 6.4	51.1	(NA)	(NA)	
1973 ASM.....	(NA)	(NA)	(NA)	12.3	70.3	11.1	22.0	56.0	132.0	139.3	272.2	3.5	38.6	(NA)	(NA)	
1972 Census.....	236	268	100	11.9	65.0	10.5	21.0	51.9	114.1	126.7	240.2	3.6	38.9	94	98	
	INDUSTRY 2491, WOOD PRESERVING															
1982 Census.....	428	524	184	10.9	159.4	8.6	16.5	108.2	383.7	978.5	1 360.2	35.9	315.3	98	96	
1981 ASM.....	(NA)	(NA)	(NA)	12.3	173.5	9.8	19.9	117.3	419.6	972.8	1 389.0	43.4	289.5	(NA)	(NA)	
1980 ASM.....	(NA)	(NA)	(NA)	13.2	170.6	10.6	21.2	118.3	449.7	975.7	1 397.4	43.3	284.0	(NA)	(NA)	
1979 ASM.....	(NA)	(NA)	(NA)	12.9	153.8	10.4	20.8	105.5	394.4	867.8	1 246.6	46.4	242.6	(NA)	(NA)	
1978 ASM.....	(NA)	(NA)	(NA)	12.9	142.2	10.2	21.0	93.8	385.7	781.4	1 166.8	⁵ 36.3	219.5	(NA)	(NA)	
1977 Census.....	368	457	192	12.6	126.1	9.9	19.7	82.9	327.1	657.5	962.6	30.3	212.5	97	97	
1976 ASM.....	(NA)	(NA)	(NA)	9.7	94.5	7.7	15.4	59.3	229.0	476.6	704.3	22.3	159.7	(NA)	(NA)	
1975 ASM.....	(NA)	(NA)	(NA)	9.3	87.5	7.4	15.7	60.2	228.3	415.8	647.7	⁵ 27.5	155.7	(NA)	(NA)	
1974 ASM.....	(NA)	(NA)	(NA)	10.6	93.6	8.6	18.5	68.1	326.3	479.8	761.2	28.1	168.4	(NA)	(NA)	
1973 ASM.....	(NA)	(NA)	(NA)	10.1	75.1	8.4	17.9	55.1	186.3	371.5	557.4	11.6	96.6	(NA)	(NA)	
1972 Census.....	309	399	168	11.3	74.5	9.2	18.8	54.4	175.8	303.6	475.8	14.8	94.7	99	96	
1971 ASM.....	(NA)	(NA)	(NA)	11.3	74.5	9.3	19.7	53.6	156.5	267.5	416.9	10.4	93.1	(NA)	(NA)	
1970 ASM.....	(NA)	(NA)	(NA)	12.0	73.3	9.7	20.2	51.8	144.2	242.6	387.8	8.4	80.1	(NA)	(NA)	
1969 ASM.....	(NA)	(NA)	(NA)	12.1	67.6	10.1	21.1	51.6	143.0	246.8	386.1	13.2	83.4	(NA)	(NA)	
1968 ASM.....	(NA)	(NA)	(NA)	12.6	65.2	10.6	22.1	50.5	145.4	230.6	375.1	9.3	79.1	(NA)	(NA)	
1967 Census.....	278	375	177	12.2	61.9	10.3	21.7	47.1	135.6	214.5	344.2	10.7	77.0	98	98	
	INDUSTRY 2492, PARTICLEBOARD ⁶															
1982 Census.....	31	54	50	5.6	104.5	4.5	8.9	77.8	193.3	344.4	547.4	112.9	43.7	97	96	
1981 ASM.....	(NA)	(NA)	(NA)	5.1	87.2	4.4	8.5	68.0	209.5	323.0	532.2	⁵ 22.4	26.8	(NA)	(NA)	
1980 ASM.....	(NA)	(NA)	(NA)	5.4	85.1	4.6	9.1	65.1	215.5	293.8	512.4	22.0	50.5	(NA)	(NA)	
1979 ASM.....	(NA)	(NA)	(NA)	6.0	85.5	5.1	10.6	67.9	255.4	290.8	539.8	⁵ 25.7	30.3	(NA)	(NA)	
1978 ASM.....	(NA)	(NA)	(NA)	6.7	91.1	5.4	11.5	69.8	332.8	306.5	633.2	34.9	28.4	(NA)	(NA)	
1977 Census.....	35	63	51	6.2	79.1	5.0	10.9	60.3	207.2	245.3	452.9	32.5	21.1	99	95	
1976 ASM.....	(NA)	(NA)	(NA)	5.6	62.7	4.6	9.3	47.4	125.7	196.5	320.5	33.2	23.1	(NA)	(NA)	
1975 ASM.....	(NA)	(NA)	(NA)	5.5	55.5	4.5	8.9	41.5	90.1	175.2	265.0	30.2	24.7	(NA)	(NA)	
1974 ASM.....	(NA)	(NA)	(NA)	7.5	67.9	6.1	12.8	52.0	168.2	199.0	364.8	58.5	25.4	(NA)	(NA)	
1973 ASM.....	(NA)	(NA)	(NA)	7.6	68.7	6.5	13.8	54.2	217.4	173.4	391.1	12.5	17.5	(NA)	(NA)	
1972 Census.....	40	68	64	7.7	65.5	6.4	13.8	51.8	144.5	152.1	295.4	34.6	16.8	91	93	
	INDUSTRY 2499, WOOD PRODUCTS, N.E.C. ⁶															
1982 Census.....	3 226	3 387	644	60.6	799.6	49.4	90.0	559.3	1 645.6	1 677.8	3 347.8	142.3	541.5	95	94	
1981 ASM.....	(NA)	(NA)	(NA)	61.5	784.9	51.3	98.0	547.0	1 679.9	1 745.8	3 392.2	⁵ 173.3	513.9	(NA)	(NA)	
1980 ASM.....	(NA)	(NA)	(NA)	65.2	747.4	52.2	99.6	516.3	1 474.1	1 701.7	3 160.2	185.0	456.6	(NA)	(NA)	
1979 ASM.....	(NA)	(NA)	(NA)	67.3	711.7	54.8	105.8	511.5	1 589.1	1 687.1	3 249.0	138.3	441.2	(NA)	(NA)	
1978 ASM.....	(NA)	(NA)	(NA)	65.1	664.9	54.5	100.9	471.3	1 415.4	1 478.3	2 884.2	119.3	398.1	(NA)	(NA)	

See footnotes at end of table.

Table 1a. Historical Statistics for the Industry: 1982 and Earlier Years—Con.

[Excludes data for auxiliaries. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Year ¹	Com- panies ² (no.)	All establishments ³		All employees		Production workers			Value added by manufac- ture ⁴ (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expen- ditures (million dollars)	End-of- year inven- tories ⁴ (million dollars)	Ratios	
		Total (no.)	With 20 employ- ees or more (no.)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)						Special- ization (per- cent)	Cover- age (per- cent)
INDUSTRY 2499, WOOD PRODUCTS, N.E.C. ⁶ —Con.															
1977 Census.....	2 903	3 050	662	64.6	608.1	53.9	102.3	438.0	1 265.5	1 302.8	2 557.6	116.9	368.5	94	93
1976 ASM.....	(NA)	(NA)	(NA)	66.7	573.7	56.2	104.3	414.1	1 142.2	1 169.5	2 272.9	102.9	338.3	(NA)	(NA)
1975 ASM.....	(NA)	(NA)	(NA)	63.4	483.4	54.0	93.9	349.2	924.2	964.1	1 898.8	96.9	269.8	(NA)	(NA)
1974 ASM.....	(NA)	(NA)	(NA)	70.2	508.2	59.8	108.6	366.7	975.4	1 037.0	1 964.6	112.0	288.9	(NA)	(NA)
1973 ASM.....	(NA)	(NA)	(NA)	66.4	446.9	56.4	108.1	325.8	899.7	848.9	1 744.3	72.5	240.1	(NA)	(NA)
1972 Census.....	3 008	3 133	646	63.0	410.0	53.0	102.6	294.3	809.1	714.6	1 518.9	86.3	202.6	93	91

¹In annual survey of manufactures (ASM) years, data are estimates based on a representative sample of establishments canvassed annually and may differ from results of a complete canvass of all establishments. ASM publication shows percentage standard errors. Unless otherwise noted, for data prior to 1967, see 1967 Census of Manufactures, vol. II, table 1 of the Industry chapter.

²For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

³Includes establishments with payroll at any time during year.

⁴Effective with the 1982 Economic Censuses, uniform instructions for reporting inventories were introduced for all sector reports. Up to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). In 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Because of this change in reporting instructions, the 1982 data for inventories and value added by manufacture included in the tables of this report are not comparable to the prior-year data shown above and in historical census of manufactures and annual survey of manufactures publications. Inventories and value added data estimated on a basis comparable to the historical data, using the reported information for 1982, are shown below:

Industries	End-of-1981 inventories (million dollars)	End-of-1982 inventories (million dollars)	1982 value added by manufacture (million dollars)
Industry 2441, Nailed wood boxes and shooks	30.6	29.2	139.5
Industry 2448, Wood pallets and skids	110.2	103.7	420.8
Industry 2449, Wood containers, n.e.c.	76.6	52.4	144.9
Industry 2491, Wood preserving	301.3	302.5	385.7
Industry 2492, Particleboard	41.9	41.8	203.3
Industry 2499, Wood products, n.e.c.	553.4	503.1	1 646.0

See Inventories in appendixes for explanation of the difference between end-of-1981 inventory figure shown in table and corresponding figure shown in footnote.

⁵Estimate for new capital expenditures has associated standard error of 15 percent or more and may be of limited reliability. Estimates for other data items are of acceptable reliability.

⁶Industry was defined or redefined for 1972 Census of Manufactures, so data are available only for years shown.

⁷Data either have associated standard errors exceeding 15 percent or are not consistent with other census series and related data; thus, these estimates may be of limited reliability.

Table 1b. Selected Operating Ratios for the Industry: 1982 and Earlier Years

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Year	Payroll per employee (dollars)	Production workers as percent of total employment (percent)	Annual hours of production workers (number)	Average hourly earnings of production workers (dollars)	Cost of materials as percent of value of shipments (percent)	Cost of materials and payroll as percent of value of shipments (percent)	Value added per employee (dollars)	Payroll as percent of value added (percent)	Value added per production worker hour (dollars)
INDUSTRY 2441, NAILED WOOD BOXES AND SHOOK									
1982 Census.....	11 953	83	1 774	5.96	54	79	21 547	55	14.67
1981 ASM.....	9 507	82	1 855	4.52	55	82	15 627	61	10.26
1980 ASM.....	9 077	83	1 815	4.37	55	80	16 385	55	10.83
1979 ASM.....	8 326	83	1 811	4.14	60	85	13 337	62	8.86
1978 ASM.....	8 576	87	1 850	3.97	59	86	12 696	68	7.89
1977 Census.....	8 016	87	1 828	3.90	56	82	13 590	59	8.46
1976 ASM.....	7 482	86	1 732	3.84	53	79	13 494	55	9.11
1975 ASM.....	7 028	83	1 767	3.53	52	76	13 153	53	8.93
1974 ASM.....	6 608	88	1 824	3.26	51	75	13 330	50	8.34
1973 ASM.....	6 147	88	1 845	2.95	54	82	10 179	60	6.24
1972 Census.....	5 710	89	1 937	2.66	57	83	9 701	59	5.64
1971 ASM.....	5 747	89	1 844	2.75	59	83	9 874	58	6.05
1970 ASM.....	5 361	88	1 895	2.51	62	87	8 019	67	4.81
1969 ASM.....	4 664	93	1 920	2.18	56	79	8 765	53	4.93
1968 ASM.....	4 677	92	1 944	2.18	55	79	8 703	54	4.89
1967 Census.....	4 459	91	1 931	2.05	55	81	7 736	58	4.42
INDUSTRY 2448, WOOD PALLETS AND SKIDS									
1982 Census.....	10 425	83	1 777	5.05	58	81	19 027	55	12.86
1981 ASM.....	10 471	85	1 835	5.00	56	81	18 722	56	11.94
1980 ASM.....	9 616	86	1 838	4.50	58	79	19 153	50	12.12
1979 ASM.....	8 972	88	1 857	4.17	61	83	16 191	55	9.88
1978 ASM.....	8 858	89	1 888	4.04	59	81	16 547	54	9.87
1977 Census.....	8 053	88	1 788	3.93	56	80	14 898	54	9.44
1976 ASM.....	8 237	87	1 763	4.13	52	74	18 282	45	11.92
1975 ASM.....	8 231	85	1 712	4.21	52	75	17 177	48	11.75
1974 ASM.....	6 930	87	1 818	3.32	50	71	16 739	41	10.55
1973 ASM.....	5 579	86	1 803	2.70	53	75	12 035	46	7.77
1972 Census.....	5 434	87	1 848	2.61	53	79	9 853	55	6.10

See footnotes at end of table.

Table 1b. Selected Operating Ratios for the Industry: 1982 and Earlier Years—Con.

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Year	Payroll per employee (dollars)	Production workers as percent of total employment (percent)	Annual hours of production workers (number)	Average hourly earnings of production workers (dollars)	Cost of materials as percent of value of shipments (percent)	Cost of materials and payroll as percent of value of shipments (percent)	Value added per employee (dollars)	Payroll as percent of value added (percent)	Value added per production worker hour (dollars)
INDUSTRY 2449, WOOD CONTAINERS, N.E.C.									
1982 Census	11 351	88	1 923	5.27	53	80	19 541	58	11.57
1981 ASM	10 581	90	1 922	4.83	54	79	19 547	54	11.36
1980 ASM	9 189	88	1 762	4.65	57	84	15 179	61	9.74
1979 ASM	8 753	90	1 987	3.92	60	87	13 719	64	7.68
1978 ASM	8 182	90	1 873	3.91	54	79	15 023	54	8.93
1977 Census	7 521	89	1 936	3.47	52	78	13 473	55	7.77
1976 ASM	7 150	91	1 893	3.39	50	76	14 221	50	8.24
1975 ASM	6 708	91	1 903	3.16	50	75	13 655	49	7.87
1974 ASM	6 152	91	2 035	2.75	51	75	12 736	48	6.86
1973 ASM	5 715	90	1 982	2.55	51	77	10 732	53	6.00
1972 Census	5 462	88	2 000	2.47	53	80	9 588	57	5.43
INDUSTRY 2491, WOOD PRESERVING									
1982 Census	14 624	79	1 919	6.56	72	84	35 202	42	23.25
1981 ASM	14 106	80	2 031	5.89	70	83	34 114	41	21.09
1980 ASM	12 924	80	2 000	5.58	70	82	34 068	38	21.21
1979 ASM	11 922	81	2 000	5.07	70	82	30 574	39	18.96
1978 ASM	11 023	79	2 059	4.47	67	79	29 899	37	18.37
1977 Census	10 017	78	1 990	4.20	68	81	25 994	38	16.58
1976 ASM	9 742	79	2 000	3.85	68	81	23 608	41	14.87
1975 ASM	9 409	80	2 122	3.83	64	78	24 548	38	14.54
1974 ASM	8 830	81	2 151	3.68	63	75	30 783	29	17.64
1973 ASM	7 436	83	2 131	3.08	67	80	18 446	40	10.41
1972 Census	6 593	81	2 043	2.89	64	79	15 558	42	9.35
1971 ASM	6 593	82	2 118	2.72	64	82	13 850	48	7.94
1970 ASM	6 108	81	2 082	2.56	63	81	12 017	51	7.14
1969 ASM	5 587	83	2 089	2.45	64	81	11 818	47	6.78
1968 ASM	5 175	84	2 085	2.29	61	79	11 540	45	6.58
1967 Census	5 074	84	2 107	2.17	62	80	11 115	46	6.25
INDUSTRY 2492, PARTICLEBOARD									
1982 Census	18 661	80	1 978	8.74	63	82	34 518	54	21.72
1981 ASM	17 098	86	1 932	8.00	61	77	41 078	42	24.65
1980 ASM	15 759	85	1 978	7.15	57	74	39 907	39	23.68
1979 ASM	14 250	85	2 078	6.41	54	70	42 567	33	24.09
1978 ASM	13 597	81	2 130	6.07	48	63	49 672	27	28.94
1977 Census	12 667	80	2 151	5.55	54	71	33 173	38	19.07
1976 ASM	11 196	82	2 022	5.10	61	81	22 446	50	13.52
1975 ASM	10 091	82	1 978	4.66	66	87	16 382	62	10.12
1974 ASM	9 053	81	2 098	4.06	55	73	22 427	40	13.14
1973 ASM	9 039	86	2 123	3.93	44	62	28 605	32	15.75
1972 Census	8 506	83	2 156	3.75	51	74	18 766	45	10.47
INDUSTRY 2499, WOOD PRODUCTS, N.E.C.									
1982 Census	13 195	82	1 822	6.21	50	74	27 155	49	18.28
1981 ASM	12 763	83	1 910	5.58	51	75	27 315	47	17.14
1980 ASM	11 463	80	1 908	5.18	54	77	22 609	51	14.80
1979 ASM	10 575	81	1 931	4.83	52	74	23 612	45	15.02
1978 ASM	10 214	84	1 851	4.67	51	74	21 742	47	14.03
1977 Census	9 414	83	1 898	4.28	50	74	19 592	48	12.37
1976 ASM	8 601	84	1 856	3.97	51	77	17 124	50	10.95
1975 ASM	7 625	85	1 739	3.72	51	76	14 577	52	9.84
1974 ASM	7 239	85	1 816	3.38	53	79	13 895	52	8.98
1973 ASM	6 730	85	1 917	3.01	49	74	13 550	50	8.32
1972 Census	6 508	84	1 936	2.87	47	74	12 843	51	7.89

Note: For qualifications of data, see footnotes on table 1a.

Table 2. Industry Statistics for Selected States: 1982 and 1977

[Excludes data for auxiliaries. Includes data for States with 150 employees or more. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Industry and geographic area	1982											1977		
	All establishments ²		All employees		Production workers			Value added by manufacture ⁴ (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	All employees ³ (1,000)	Value added by manufacture (million dollars)	
	E ¹	Total (no.)	With 20 employees or more (no.)	Number ³ (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)							Wages (million dollars)
INDUSTRY 2441, NAILED WOOD BOXES AND SHOOK														
United States	E2	338	90	6.4	76.5	5.3	9.4	56.0	137.9	166.7	306.8	6.9	8.6	116.2
California	E1	70	21	1.5	20.5	1.2	2.3	15.5	35.2	56.6	93.6	2.1	1.6	26.3
Florida	E1	7	3	.2	1.4	.2	.3	1.1	2.4	2.8	5.2	(D)	.3	3.6
Georgia	E9	4	2	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Kentucky	E2	5	1	.2	1.1	.1	.2	.7	1.5	1.4	3.0	(D)	(NA)	(NA)
Michigan	E5	15	3	.2	2.1	.1	.2	1.5	4.3	4.7	9.0	.1	.2	4.3
Mississippi	E1	4	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
Missouri	-	7	2	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
New Hampshire	E5	7	4	.2	2.3	.2	.3	1.6	3.4	4.0	7.4	(D)	.3	3.1
New Jersey	E6	15	2	.2	2.2	.1	.2	1.7	3.2	3.4	6.5	(D)	(NA)	(NA)
New York	E4	23	3	.2	2.5	.2	.3	1.9	4.2	4.2	8.4	.1	.3	4.2
North Carolina	E5	13	7	.3	2.4	.2	.4	1.7	4.2	6.5	10.6	.2	(NA)	(NA)
Ohio	E1	19	5	.2	3.0	.2	.3	1.9	5.1	5.4	10.6	(D)	(NA)	(NA)
Pennsylvania	E5	14	3	.2	1.5	.1	.2	1.1	2.8	2.4	5.3	.4	.5	6.3
Tennessee	E7	8	3	.2	2.1	.2	.3	1.6	3.1	4.1	7.2	(D)	.5	4.2
Texas	E5	17	7	.4	5.5	.4	.6	3.8	10.0	12.1	22.3	.3	.6	9.2
Washington	-	10	6	.5	8.3	.4	.6	6.1	20.0	24.9	44.7	.5	.5	10.1
Wisconsin	E1	11	2	.2	2.3	.2	.3	1.5	3.9	2.9	6.9	.4	.4	4.0
INDUSTRY 2448, WOOD PALLETS AND SKIDS														
United States	E3	1 677	362	22.1	230.4	18.4	32.7	165.0	420.5	589.1	1 012.3	29.4	20.3	303.1
Alabama	E3	38	6	.4	4.2	.3	.6	2.9	5.7	11.9	17.7	.8	.6	8.2
Arkansas	E1	33	9	.5	4.5	.4	.7	3.5	7.8	12.0	19.8	(D)	.4	4.3
California	E3	90	26	1.7	22.6	1.5	2.6	16.3	36.9	73.4	110.6	1.8	1.6	26.3
Connecticut	E3	22	4	.2	2.3	.2	.3	1.5	4.3	5.0	9.3	.4	.2	3.0
Florida	-	15	5	.3	3.4	.3	.4	2.2	7.2	9.2	16.3	.4	.2	1.9
Georgia	E4	64	15	.9	7.7	.7	1.3	5.7	14.7	17.4	32.1	.7	.6	7.4
Illinois	E4	67	14	.7	7.8	.6	1.1	5.5	15.4	19.2	34.6	1.0	.6	9.5
Indiana	E1	79	14	.9	8.8	.7	1.2	6.6	15.3	17.5	32.8	.8	.7	12.1
Iowa	E3	31	4	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	.3	3.8
Kentucky	E4	68	20	1.0	8.2	.9	1.4	6.0	15.9	18.5	34.5	(D)	1.1	13.9
Louisiana	E1	16	5	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	.3	3.3
Massachusetts	E3	35	9	.4	4.5	.4	.7	3.2	6.5	10.3	16.6	.6	.3	4.3
Michigan	E5	124	18	1.3	14.2	1.1	1.9	10.4	28.9	41.8	71.8	1.5	1.5	25.5
Minnesota	E2	27	3	.3	3.0	.2	.4	2.1	5.0	6.7	11.6	.3	.3	4.0
Mississippi	E4	33	6	.5	4.5	.4	.7	3.4	8.7	9.1	17.8	(D)	BB	(D)
Missouri	E4	82	20	1.2	10.3	1.0	1.7	7.4	17.5	27.2	44.9	.9	1.0	15.8
New Jersey	E5	36	5	.4	3.6	.3	.5	2.4	6.7	9.4	16.2	.4	.3	4.4
New York	E2	73	15	.9	10.7	.7	1.4	7.2	19.1	21.6	40.8	1.8	.7	10.9
North Carolina	E1	48	14	.8	7.5	.6	1.2	5.5	15.2	16.9	32.1	1.4	.6	7.7
Ohio	E2	132	21	1.4	14.5	1.1	2.1	10.8	27.0	37.7	64.5	3.4	1.3	20.2
Oregon	E2	12	4	.2	2.5	.2	.3	1.5	3.8	7.9	12.2	.4	.2	2.8
Pennsylvania	E3	116	22	1.4	15.1	1.1	2.0	10.4	32.3	42.0	74.4	1.5	1.3	20.7
South Carolina	E2	31	4	.3	2.1	.2	.4	1.6	4.4	5.7	10.0	(D)	AA	(D)
Tennessee	E6	53	12	.7	6.9	.6	1.0	4.9	13.2	17.4	30.7	(D)	.7	8.4
Texas	E4	67	21	1.2	12.1	1.0	1.9	9.3	20.8	31.1	52.4	1.3	1.3	16.5
Virginia	E2	43	18	1.2	12.6	.9	1.7	8.5	21.5	26.3	47.8	2.2	.9	12.3
Washington	E2	20	7	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
West Virginia	E2	16	3	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
Wisconsin	E1	70	19	1.1	11.8	.9	1.6	8.1	20.4	24.4	44.8	1.5	1.1	16.5
INDUSTRY 2449, WOOD CONTAINERS, N.E.C.														
United States	E2	235	72	7.4	84.0	6.5	12.5	65.9	144.6	168.8	315.8	3.7	8.9	120.4
Alabama	E4	8	2	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	AA	(D)
Arkansas	E3	7	4	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	CC	(D)
California	E5	46	4	.4	4.3	.3	.6	3.2	8.0	7.5	15.6	.1	.3	5.4
Florida	E1	8	4	.4	4.0	.4	.8	3.2	10.2	11.3	21.5	(D)	.7	7.2
Georgia	-	8	5	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	1.2	15.6
Kentucky	E6	11	4	.5	9.7	.5	.8	8.5	14.2	39.2	56.2	(D)	.6	8.4
Mississippi	-	5	4	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	.6	12.1
Missouri	-	6	2	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
North Carolina	-	13	8	1.0	9.9	1.0	1.9	8.2	19.8	20.7	40.0	.4	.9	9.9
Ohio	E6	7	3	.2	2.3	.2	.3	1.7	3.7	3.1	6.9	(D)	(NA)	(NA)
South Carolina	-	4	3	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	AA	(D)
Tennessee	-	5	5	.5	7.5	.5	1.0	6.2	7.5	17.9	26.6	(D)	.6	6.5
Texas	E2	9	3	.3	2.6	.2	.5	2.0	4.8	2.7	7.4	.1	.4	2.1
Virginia	-	8	2	.2	1.2	.1	.3	1.1	2.0	3.0	4.9	(D)	AA	(D)
Wisconsin	E2	9	5	.3	5.5	.3	.5	4.1	7.6	4.2	11.9	.2	.3	5.6

See footnotes at end of table.

Table 2. Industry Statistics for Selected States: 1982 and 1977—Con.

[Excludes data for auxiliaries. Includes data for States with 150 employees or more. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Industry and geographic area	E¹	1982										1977		
		All establishments²		All employees		Production workers			Value added by manufacture⁴ (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	All employees³ (1,000)	Value added by manufacture (million dollars)
		Total (no.)	With 20 employees or more (no.)	Number³ (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)						
INDUSTRY 2491, WOOD PRESERVING														
United States	E1	524	184	10.9	159.4	8.6	16.5	108.2	383.7	978.5	1 360.2	35.9	12.6	327.1
Alabama	E2	29	13	.8	10.3	.7	1.2	7.0	25.7	80.1	106.1	1.9	.8	22.7
Arkansas	-	17	7	.5	7.0	.4	.8	5.1	20.3	52.3	71.4	1.0	.7	17.5
California	E3	31	5	.4	6.7	.3	.5	4.8	21.8	27.8	50.4	(D)	.7	20.3
Florida	E4	25	7	.5	6.0	.4	.7	4.0	9.0	46.5	56.9	2.0	.5	10.6
Georgia	-	30	17	1.0	13.6	.8	1.6	9.8	33.9	71.7	104.5	3.4	1.1	25.9
Illinois	E1	11	5	.2	3.3	.2	.3	2.3	11.5	18.0	29.0	.8	.3	12.5
Indiana	E2	13	3	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	AA	(D)
Kentucky	E2	12	5	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Louisiana	E1	21	6	.4	4.9	.3	.6	3.3	11.7	32.8	44.2	(D)	.6	10.9
Minnesota	E3	12	4	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
Mississippi	E2	27	14	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	CC	(D)
Missouri	E1	22	6	.3	3.4	.3	.4	2.3	8.4	22.9	30.9	1.3	.3	8.3
North Carolina	E1	29	6	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
Ohio	-	11	3	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	.2	5.6
Oregon	E1	12	8	.4	8.3	.3	.6	5.6	13.5	36.5	54.1	.9	.5	15.1
Pennsylvania	-	16	5	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	AA	(D)
South Carolina	-	11	4	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	.6	19.3
Tennessee	E1	7	2	.2	2.0	.1	.2	1.4	4.9	19.5	24.1	.4	AA	(D)
Texas	E1	33	16	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	.7	17.9
Virginia	E1	17	12	.7	9.8	.5	1.1	6.2	31.2	58.9	85.4	1.2	.5	14.1
Washington	E2	22	10	.6	11.7	.5	1.0	9.2	23.3	47.3	72.5	(D)	.6	11.6
West Virginia	-	8	4	.3	4.1	.3	.5	2.8	8.4	17.7	26.1	.8	.5	12.1
Wisconsin	-	11	3	.2	2.3	.1	.2	1.6	5.2	9.5	15.3	.3	(NA)	(NA)
INDUSTRY 2492, PARTICLEBOARD														
United States	-	54	50	5.6	104.5	4.5	8.9	77.8	193.3	344.4	547.4	112.9	6.2	207.2
Alabama	-	3	3	.3	4.7	.2	.5	3.4	15.5	15.2	30.7	.4	.4	8.2
Georgia	-	4	3	.3	5.8	.3	.6	4.4	11.8	26.0	38.2	1.2	.4	15.4
Louisiana	-	3	3	.4	6.3	.3	.6	4.7	10.6	24.1	34.6	.6	.3	12.3
Michigan	-	2	2	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	AA	(D)
Minnesota	-	3	3	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Mississippi	-	3	3	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
New Mexico	E9	1	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
North Carolina	-	2	2	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	AA	(D)
Oregon	-	11	10	1.0	25.2	.8	1.5	19.2	52.0	86.2	138.6	1.8	1.6	67.4
Virginia	-	4	4	.8	11.8	.6	1.2	8.5	22.7	38.0	60.3	1.3	.8	17.8
Wisconsin	-	3	3	.3	6.5	.2	.5	5.0	13.4	18.5	32.1	(D)	AA	(D)
INDUSTRY 2499, WOOD PRODUCTS, N.E.C.														
United States	E2	3 387	644	60.6	799.6	49.4	90.0	559.3	1 645.6	1 677.8	3 347.8	142.3	64.6	1 265.5
Alabama	E2	61	11	.8	8.9	.7	1.3	6.6	17.2	19.3	36.7	1.0	.5	10.2
Arizona	E5	31	3	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Arkansas	E2	42	16	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	EE	(D)
California	E2	484	97	7.9	109.6	6.3	11.5	75.7	227.2	230.1	469.8	18.0	8.1	173.2
Colorado	E8	47	2	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Connecticut	-	34	3	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
Florida	E4	150	11	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	.7	12.5
Georgia	E1	67	11	1.4	15.9	1.2	2.0	11.4	40.3	32.1	72.6	1.1	1.1	17.2
Illinois	E1	134	33	3.8	48.4	2.9	5.4	31.7	102.4	74.9	175.8	5.4	4.9	87.6
Indiana	E4	76	15	1.4	14.3	1.2	1.8	9.8	29.5	22.6	52.4	(D)	1.7	34.5
Iowa	E1	21	6	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	AA	(D)
Kansas	E1	21	3	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	AA	(D)
Kentucky	E2	36	3	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	.4	6.0
Louisiana	E1	33	3	.3	3.7	.3	.5	2.6	10.3	12.3	22.9	.2	.2	3.0
Maine	-	87	33	FF	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	FF	(D)
Maryland	E6	34	5	.5	6.3	.4	.7	4.9	13.2	13.6	27.4	.5	.5	9.6
Massachusetts	E2	105	19	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	EE	(D)
Michigan	E1	129	24	2.1	35.6	1.6	3.1	24.4	78.1	66.4	142.9	(D)	FF	(D)
Minnesota	E1	64	14	1.6	28.8	1.2	2.2	18.7	37.4	51.6	89.9	(D)	2.1	59.4
Mississippi	-	50	13	2.8	44.0	2.2	4.2	29.9	107.3	95.3	205.4	(D)	4.2	88.0
Missouri	E4	82	22	1.4	13.4	1.2	2.0	10.0	24.0	23.5	48.1	3.4	1.4	18.7
Montana	-	9	2	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	AA	(D)
New Hampshire	E1	63	12	1.1	13.8	1.0	2.1	10.7	24.1	22.3	47.0	(D)	CC	(D)
New Jersey	E6	81	11	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	1.6	26.8
New York	E3	241	47	3.6	47.9	3.0	5.4	32.2	93.8	92.7	186.5	29.4	3.7	64.7
North Carolina	E1	167	47	4.4	56.0	3.6	6.6	38.9	124.8	122.1	246.4	8.6	4.1	82.2
Ohio	E1	94	24	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	2.6	53.3
Oklahoma	E3	28	5	.4	5.4	.3	.5	3.9	11.6	15.5	27.3	.6	AA	(D)
Oregon	E1	122	22	1.5	26.0	1.2	2.2	18.4	51.6	65.2	118.0	3.2	2.3	64.2
Pennsylvania	E1	133	13	1.5	22.9	1.1	2.2	14.9	39.2	59.7	104.3	3.8	2.2	60.6
Rhode Island	-	16	3	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	AA	(D)
South Carolina	-	45	11	1.2	14.5	1.0	1.6	10.6	27.4	44.8	71.4	(D)	CC	(D)
Tennessee	E2	75	16	1.2	14.5	1.1	1.9	11.3	21.7	26.4	50.1	2.4	1.6	23.0
Texas	E2	166	23	2.4	27.1	2.1	3.7	19.2	54.8	81.2	139.7	9.7	1.6	35.8
Vermont	E1	34	12	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	CC	(D)
Virginia	E1	64	13	1.5	20.3	1.3	2.3	14.3	40.8	34.8	73.5	1.9	1.7	31.0
Washington	E6	85	10	.8	12.8	.7	1.3	8.9	25.2	28.4	53.9	(D)	CC	(D)
Wisconsin	-	70	18	1.9	29.5	1.5	2.6	21.0	60.7	59.9	120.6	(D)	2.0	42.6

See footnotes at end of table.

Table 2. Industry Statistics for Selected States: 1982 and 1977—Con.

Note: For qualifications of data, see footnotes on table 1a.

¹Payroll and sales data for some small single-unit companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate the items shown for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at time data were tabulated. The following symbols are shown for those States where estimated data based on administrative records data account for 10 percent or more of figures shown: E1—10 to 19 percent; E2—20 to 29 percent; E3—30 to 39 percent; E4—40 to 49 percent; E5—50 to 59 percent; E6—60 to 69 percent; E7—70 to 79 percent; E8—80 to 89 percent; E9—90 percent or more.

²Includes establishments with payroll at any time during year.

³Statistics for some producing States have been withheld to avoid disclosing data for individual companies. However, for States with 150 employees or more, number of establishments is shown and employment size range is indicated by one of the following symbols: AA—150 to 249 employees; BB—250 to 499 employees; CC—500 to 999 employees; EE—1,000 to 2,499 employees; FF—2,500 employees or more.

⁴Beginning in 1982, all respondents were requested to report their inventories at cost or market prior to adjustment to LIFO cost. This is a change from prior years in which respondents were permitted to value their inventories using any generally accepted accounting method. Consequently, data for inventories and value added by manufacture are not comparable to prior-year data.

Table 3a. Summary Statistics for the Industry: 1982

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Nailed wood boxes and skids (SIC 2441)	Wood pallets and skids (SIC 2448)	Wood containers, n.e.c. (SIC 2449)	Wood preserving (SIC 2491)	Particleboard (SIC 2492)	Wood products, n.e.c. (SIC 2499)
Companies ¹ number	332	1 642	216	428	31	3 226
All establishments ² do	338	1 677	235	524	54	3 387
With 1 to 19 employees do	248	1 315	163	340	4	2 743
With 20 to 99 employees do	81	355	50	171	24	525
With 100 employees or more do	9	7	22	13	26	119
All employees:						
Average for year 1,000	6.4	22.1	7.4	10.9	5.6	60.6
Annual payroll ³ mil. dol.	76.5	230.4	84.0	159.4	104.5	799.6
Production workers:						
Average for year 1,000	5.3	18.4	6.5	8.6	4.5	49.4
March do	5.2	19.0	6.3	8.7	4.6	50.0
May do	5.4	18.9	6.5	8.7	4.5	50.3
August do	5.4	18.4	6.4	8.8	4.4	48.7
November do	5.3	17.6	6.7	7.9	4.6	48.6
Hours millions	9.4	32.7	12.5	16.5	8.9	90.0
January to March do	2.2	8.0	2.8	3.9	2.1	22.5
April to June do	2.5	8.2	3.2	4.3	2.3	22.5
July to September do	2.5	8.1	3.1	4.3	2.3	21.8
October to December do	2.2	8.0	3.4	3.9	2.3	22.5
Wages mil. dol.	56.0	165.0	65.9	108.2	77.8	559.3
Value added by manufacture ⁴ do	137.9	420.5	144.6	383.7	193.3	1 645.6
Cost of materials, etc. ⁵ do	166.7	589.1	168.8	978.5	344.4	1 677.8
Materials, parts, containers, etc., consumed do	145.4	540.7	158.7	891.2	293.1	1 444.5
Resales do	13.0	17.7	3.0	41.3	.3	42.6
Fuels consumed ⁶ do	2.4	10.2	1.9	26.8	15.1	69.3
Purchased electric energy ⁷ do	3.6	17.4	4.3	11.8	33.7	106.2
Contract work do	2.3	3.0	.8	7.4	2.1	14.4
Value of shipments, including resales do	306.8	1 012.3	315.8	1 360.2	547.4	3 347.8
Value of resales do	15.7	22.0	3.9	43.2	.4	57.4
Manufacturers' inventories (see tables 3b and 3c)						
Capital expenditures for plant and equipment ⁸ do	8.8	37.5	6.6	41.7	114.4	158.2
New capital expenditures do	6.9	29.4	3.7	35.9	112.9	142.3
New buildings and other structures do	3.1	4.3	1.2	4.5	15.8	21.9
New machinery and equipment do	3.8	25.0	2.5	31.3	97.1	120.4
Used capital expenditures do	2.0	8.1	2.9	5.9	1.5	16.0
Primary product specialization ratio ⁹ percent	90	92	95	98	97	95
Coverage ratio ¹⁰ do	81	93	97	96	96	94

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²Includes establishments with payroll at any time during year.

³Data on supplemental labor costs are not included in annual payroll, but are shown in table 3d.

⁴Value added by manufacture is computed using inventory data reported on a cost or market basis prior to any adjustment to LIFO cost. See table 3b, footnote 1 for further explanation.

⁵Data on purchased services for the repair of buildings and machinery and for communication services are not included in cost of materials, etc., but are shown in table 3d.

⁶Data on purchased fuels by type were not collected for 1982. See MC82-S-4, Fuels and Electric Energy Consumed, for 1981 data on purchased fuels by type.

⁷Data on quantity of electric energy used for heat and power are included in table 3d.

⁸Data on capital expenditures for new machinery and equipment by type, depreciable assets, retirements, rental payments, and depreciation are included in table 3d.

⁹Represents ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for establishments classified in industry.

¹⁰Represents ratio of primary products shipped by establishments classified in industry to total shipments of such products by all manufacturing establishments, wherever classified.

Table 3b. Value of Inventories for the Industry: End of 1981 and 1982

[Million dollars. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Nailed wood boxes and shook (SIC 2441)		Wood pallets and skids (SIC 2448)		Wood containers, n.e.c. (SIC 2449)		Wood preserving (SIC 2491)		Particleboard (SIC 2492)		Wood products, n.e.c. (SIC 2499)	
	End of 1981	End of 1982	End of 1981	End of 1982	End of 1981	End of 1982	End of 1981	End of 1982	End of 1981	End of 1982	End of 1981	End of 1982
Total inventories¹	32.9	29.9	112.3	104.3	82.4	57.2	315.8	315.3	54.1	43.7	599.7	541.5
Detail by method of valuation:												
Subject to LIFO costing ²	(D)	(D)	(D)	(D)	22.3	17.5	39.7	46.2	8.9	7.8	155.1	136.2
LIFO reserve	(D)	(D)	(D)	(D)	5.6	4.8	13.4	12.1	3.1	1.9	55.2	47.9
LIFO value	(D)	(D)	(D)	(D)	16.7	12.7	26.3	34.1	5.8	5.9	99.8	88.4
Not subject to LIFO costing	(D)	(D)	(D)	(D)	32.3	24.6	195.4	190.9	31.9	32.7	235.6	214.2
Valuation method not reported ³	17.4	15.5	62.1	60.4	26.2	13.7	75.7	72.8	12.5	2.5	200.5	179.0
Amount subject to LIFO reported without associated reserve and value ⁴	.4	.4	.6	.6	1.6	1.4	5.0	5.4	.7	.7	8.5	12.1
Detail by stage of fabrication:												
Finished goods	10.1	7.9	17.8	16.9	13.6	15.9	134.9	149.3	27.5	18.2	246.5	231.8
Work in process	3.2	3.2	22.8	20.8	11.5	6.7	81.2	68.9	3.7	3.3	100.2	90.2
Materials and supplies	19.7	18.8	71.7	66.6	57.3	34.6	99.8	97.1	22.9	22.2	252.9	219.5

¹Effective with the 1982 Economic Censuses, uniform instructions for reporting inventories were introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (LIFO, FIFO, market, to name a few). In 1982, all respondents were requested to report inventories at cost or market. LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve. For further explanation, see inventories in appendixes.

²Only includes data reported by respondents who (a) indicated amount of inventories subject to LIFO cost, and (b) provided sufficient information to determine associated LIFO reserve and value figures.

³Includes data estimated for nonresponse and nonmail administrative records and data reported by respondents who provided total inventory figures without other information.

⁴Includes data reported by respondents who indicated their inventories were subject to LIFO cost, but did not provide associated LIFO reserve and value figures.

Table 3c. Inventories by Specific Method of Valuation for the Industry: End of 1982

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Nailed wood boxes and shook (SIC 2441)		Wood pallets and skids (SIC 2448)		Wood containers, n.e.c. (SIC 2449)		Wood preserving (SIC 2491)		Particleboard (SIC 2492)		Wood products, n.e.c. (SIC 2499)	
	Percent of total	Absolute standard error (percent)	Percent of total	Absolute standard error (percent)	Percent of total	Absolute standard error (percent)	Percent of total	Absolute standard error (percent)	Percent of total	Absolute standard error (percent)	Percent of total	Absolute standard error (percent)
Total inventories	100.0	(X)	100.0	(X)	100.0	(X)	100.0	(X)	100.0	(X)	100.0	(X)
Last-In, First-Out (LIFO) methods	(D)	(X)	(D)	(X)	30.6	(X)	14.7	(X)	17.9	(X)	25.2	(X)
Non-LIFO methods	(D)	(X)	(D)	(X)	43.0	(X)	60.5	(X)	74.9	(X)	39.6	(X)
Cost basis:												
First-In, First-Out (FIFO)	(D)	2.5	17.3	3.8	17.1	3.7	20.5	1.4	6.7	2.3	16.6	2.7
Average cost	(D)	4.2	(D)	1.7	(D)	3.8	14.9	1.0	49.6	4.1	(D)	.8
Specific or actual cost	10.8	3.4	13.0	3.4	(D)	1.2	(D)	.3	(D)	1.6	(D)	1.9
Standard cost	(D)	3.4	(D)	.7	(Z)	(Z)	18.9	2.4	(D)	2.2	7.9	1.0
Other	(Z)	(Z)	.5	.4	(Z)	(Z)	(D)	.1	(Z)	(Z)	1.7	.8
Market basis:												
Market lower than cost	(Z)	(Z)	(D)	1.8	(Z)	(Z)	(D)	(D)	(D)	1.3	(D)	.3
Market always used	(Z)	(Z)	(D)	1.0	(D)	(D)	(D)	(D)	(Z)	(Z)	(D)	.1
Valuation method not reported	51.9	(X)	57.9	(X)	23.9	(X)	23.1	(X)	5.6	(X)	33.1	(X)
Amount subject to LIFO reported without associated reserve and value	1.2	(X)	.5	(X)	2.5	(X)	1.7	(X)	1.6	(X)	2.2	(X)

Note: The percentages shown for the LIFO and non-LIFO totals and the categories "valuation method not reported" and "amount subject to LIFO reported..." are based on the census universe estimates included in table 3b. The percentages shown for the specific non-LIFO methods of valuation (e.g., FIFO, etc.) are based on a representative sample of establishments included in the annual survey of manufactures (ASM) panel for 1982 (see appendixes for description of ASM). The absolute standard error of each of the ASM estimates is shown above.

Table 3d. Supplemental Industry Statistics Based on Sample Estimates: 1982

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Nailed wood boxes and shook (SIC 2441)		Wood pallets and skids (SIC 2448)		Wood containers, n.e.c. (SIC 2449)		Wood preserving (SIC 2491)		Particleboard (SIC 2492)		Wood products, n.e.c. (SIC 2499)	
	Amount (million dollars)	Relative standard error of estimate ¹ (percent)	Amount (million dollars)	Relative standard error of estimate ¹ (percent)	Amount (million dollars)	Relative standard error of estimate ¹ (percent)	Amount (million dollars)	Relative standard error of estimate ¹ (percent)	Amount (million dollars)	Relative standard error of estimate ¹ (percent)	Amount (million dollars)	Relative standard error of estimate ¹ (percent)
Supplemental labor costs:												
Total	13.3	7	31.4	8	13.3	7	35.3	2	27.8	3	166.3	5
Legal costs	7.7	5	21.4	7	7.6	7	18.3	2	11.7	3	87.0	11
Voluntary costs	5.7	12	10.1	14	5.7	10	17.0	3	16.1	3	79.3	5
Purchased services:												
Cost of purchased services for the repair of—												
Buildings and other structures	.3	32	.8	43	.1	21	1.1	23	.4	25	2.8	75
Response coverage ratio (percent) ²	53.5	(X)	38.8	(X)	53.4	(X)	57.9	(X)	89.3	(X)	59.6	(X)
Machinery	1.4	24	10.6	26	3.5	21	11.5	11	5.7	19	16.1	10
Response coverage ratio (percent) ²	57.0	(X)	56.4	(X)	65.2	(X)	69.9	(X)	89.3	(X)	66.8	(X)
Cost of purchased communication services	.6	24	1.4	23	.4	23	2.0	10	.6	15	8.7	11
Response coverage ratio (percent) ²	54.3	(X)	49.9	(X)	54.4	(X)	71.2	(X)	78.6	(X)	70.7	(X)

See footnotes at end of table.

Table 3d. Supplemental Industry Statistics Based on Sample Estimates: 1982—Con.

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Nailed wood boxes and shooks (SIC 2441)		Wood pallets and skids (SIC 2448)		Wood containers, n.e.c. (SIC 2449)		Wood preserving (SIC 2491)		Particleboard (SIC 2492)		Wood products, n.e.c. (SIC 2499)	
	Amount (million dollars)	Relative standard error of estimate ¹ (percent)	Amount (million dollars)	Relative standard error of estimate ¹ (percent)	Amount (million dollars)	Relative standard error of estimate ¹ (percent)	Amount (million dollars)	Relative standard error of estimate ¹ (percent)	Amount (million dollars)	Relative standard error of estimate ¹ (percent)	Amount (million dollars)	Relative standard error of estimate ¹ (percent)
Electric energy used for heat and power:												
Purchased:												
Quantity (million kWh)	68.3	10	197.1	57	78.4	5	284.5	3	824.7	3	2 226.8	2
Cost	3.6	(X)	17.4	(X)	4.3	(X)	11.8	(X)	33.7	(X)	106.2	(X)
Generated less sold (million kWh)	(S)	(S)	—	1	(S)	1	(S)	—	—	1	(D)	5
Gross book value of depreciable assets:												
Total:												
Beginning of year	107.6	21	325.4	8	80.6	9	473.0	13	631.7	9	1 487.6	6
New capital expenditures	13.3	50	25.2	23	4.3	34	33.2	20	90.9	4	126.8	12
Used capital expenditures	8.5	64	3.7	50	3.6	20	2.5	8	7	33	14.1	16
Retirements	5.5	37	16.1	30	7.0	24	17.7	8	4.6	15	62.4	10
End of year	123.9	25	338.2	9	81.6	10	491.0	14	718.7	8	1 566.0	5
Buildings and other structures:												
Beginning of year	31.3	22	83.7	13	26.0	10	49.8	13	96.9	12	332.0	7
New capital expenditures	5.6	57	6.4	36	1.1	38	3.0	14	13.7	4	23.4	17
Used capital expenditures	2.2	91	.2	87	.2	1	.2	1	—	1	4.7	36
Retirements	1.6	32	4.6	35	1.4	29	2.1	9	.9	20	13.4	11
End of year	37.5	25	85.8	13	26.0	11	50.9	13	109.8	11	346.6	7
Machinery and equipment:												
Beginning of year	76.3	21	241.7	9	54.6	11	423.2	13	534.8	8	1 155.6	5
New capital expenditures	7.7	50	18.8	23	3.2	44	30.2	21	77.2	4	103.4	13
Automobiles, trucks, etc., for highway use5	40	5.3	35	.5	22	3.3	19	.2	16	4.1	22
Computers and peripheral data processing equipment1	63	(Z)	86	.1	42	.3	1	.3	38	1.9	11
All other	1.5	29	9.7	33	.6	18	18.9	32	75.7	4	65.3	8
New machinery and equipment, n.s.k. ³	5.6	68	3.7	83	1.9	70	7.7	13	.9	23	32.1	39
Used capital expenditures	6.3	81	3.5	53	3.4	21	2.3	8	.7	33	9.4	11
Retirements	3.9	39	11.6	29	5.6	25	15.6	8	3.8	18	48.9	12
End of year	86.4	26	252.4	9	55.6	13	440.1	14	608.9	8	1 219.4	5
Rental payments:												
Total	2.4	23	10.3	27	2.0	29	4.4	6	.3	17	27.9	17
Buildings and other structures	1.4	31	4.2	30	.5	40	.7	9	(Z)	55	18.9	26
Machinery and equipment	1.0	35	6.1	38	1.5	37	3.7	8	.3	14	9.0	9
Depreciation charges during 1982:												
Total	10.2	26	37.5	22	7.3	44	35.1	12	38.2	10	104.0	4
Buildings and other structures	2.1	24	8.2	24	2.8	31	2.5	9	3.9	10	14.7	5
Machinery and equipment	8.2	28	29.3	22	4.5	51	32.6	12	34.3	10	89.4	4

Note: Data for total new capital expenditures, new building expenditures, new machinery expenditures, and total used expenditures are also shown in table 3a. Data in table 3a are census universe totals and may differ from annual survey of manufactures (ASM) sample estimates shown in this table. Data in this table represent best estimates of year-to-year change as measured by the continuing ASM sample. However, they are subject to sampling error and, hence, as estimates of level, are not as reliable as universe figures shown in table 3a.

¹For description of relative standard error of estimate, see Qualifications of the Data in appendixes.

²Measure of extent to which respondents reported each item. Derived for each item by calculating the ratio of weighted employment for those sample establishments that reported the specific inquiry to weighted total employment for all sample establishments classified in industry. (See appendixes for explanation of sample weight.)

³Represents total machinery and equipment expenditures for establishments that did not break down their expenditures by specific type.

Table 4. Industry Statistics by Employment Size of Establishment: 1982

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Industry and employment size class	E ¹	All establishments (no.)	All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	End-of-year inventories (million dollars)
			Number (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)					
INDUSTRY 2441, NAILED WOOD BOXES AND SHOOK												
Total	E2	338	6.4	76.5	5.3	9.4	56.0	137.9	166.7	306.8	6.9	29.9
Establishments with an average of—												
1 to 4 employees	E7	108	.2	2.5	.2	.3	2.2	5.1	6.4	11.6	.1	1.2
5 to 9 employees	E4	68	.5	5.5	.4	.7	3.7	9.6	10.1	19.8	.3	1.6
10 to 19 employees	E2	72	1.0	12.0	.8	1.4	8.1	22.9	20.9	43.7	1.3	4.2
20 to 49 employees	E3	61	1.9	21.8	1.6	2.7	15.9	36.2	44.8	82.3	2.0	7.9
50 to 99 employees	E2	20	1.4	17.1	1.2	2.2	12.2	31.6	37.6	69.7	1.6	6.7
100 to 249 employees	E2	8	1.4	17.6	1.1	2.1	13.9	32.4	47.0	79.6	1.5	8.4
250 to 499 employees	—	1	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Covered by administrative records ²	E9	88	.3	2.3	.2	.4	1.8	4.1	5.3	9.4	.1	1.0
INDUSTRY 2448, WOOD PALLETS AND SKIDS												
Total	E3	1 677	22.1	230.4	18.4	32.7	165.0	420.5	589.1	1 012.3	29.4	104.3
Establishments with an average of—												
1 to 4 employees	E8	597	1.2	11.6	1.1	1.9	10.2	28.1	35.4	63.7	1.6	6.6
5 to 9 employees	E5	351	2.4	23.4	2.0	3.6	17.0	47.1	62.9	110.1	3.0	10.4
10 to 19 employees	E2	367	5.1	49.7	4.2	7.2	35.8	91.8	129.1	220.6	8.8	20.2
20 to 49 employees	E2	295	8.5	87.3	7.1	12.5	61.2	160.7	202.7	363.5	8.5	37.6
50 to 99 employees	E5	60	4.0	47.3	3.3	6.1	33.2	73.1	126.9	201.3	5.7	17.3
100 to 249 employees	E5	7	.9	11.1	.7	1.3	7.5	19.6	32.2	53.1	1.8	12.2
Covered by administrative records ²	E9	657	2.1	16.7	1.8	3.4	13.4	37.3	47.1	84.6	2.4	8.9

See footnotes at end of table.

Table 4. Industry Statistics by Employment Size of Establishment: 1982—Con.

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes.

Industry and employment size class	E ¹	All establishments (no.)	All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	End-of-year inventories (million dollars)
			Number (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)					
INDUSTRY 2449, WOOD CONTAINERS, N.E.C.												
Total-----	E2	235	7.4	84.0	6.5	12.5	65.9	144.6	168.8	315.8	3.7	57.2
Establishments with an average of—												
1 to 4 employees-----	E9	92	.2	1.6	.2	.3	1.5	4.0	3.8	7.8	(Z)	1.2
5 to 9 employees-----	E8	36	.2	2.6	.2	.4	2.0	5.0	4.7	9.7	.1	1.4
10 to 19 employees-----	E5	35	.5	5.6	.4	.7	4.1	10.9	9.5	20.6	.1	2.8
20 to 49 employees-----	E2	28	.9	8.9	.7	1.3	6.6	14.6	12.9	27.4	.3	4.1
50 to 99 employees-----	E2	22	1.5	18.2	1.3	2.5	13.7	29.5	30.0	62.1	.5	11.6
100 to 249 employees-----	E2	19	3.2	35.7	2.9	5.7	29.1	63.6	89.3	152.5	2.1	29.5
250 to 499 employees-----	-	3	.9	11.3	.8	1.5	8.9	17.0	18.6	35.7	.6	6.5
Covered by administrative records ² -----	E9	89	.2	2.0	.2	.4	1.8	4.7	4.5	9.3	(Z)	1.4
INDUSTRY 2491, WOOD PRESERVING												
Total-----	E1	524	10.9	159.4	8.6	16.5	108.2	383.7	978.5	1 360.2	35.9	315.3
Establishments with an average of—												
1 to 4 employees-----	E7	145	.3	3.9	.2	.4	3.1	10.0	23.0	34.0	1.1	7.8
5 to 9 employees-----	E7	90	.6	7.9	.5	.9	5.3	17.3	40.2	59.9	2.2	12.4
10 to 19 employees-----	E3	105	1.5	20.5	1.1	2.0	13.3	54.3	143.2	197.3	4.4	36.8
20 to 49 employees-----	E1	131	4.2	60.5	3.3	6.4	41.4	148.4	385.9	538.0	13.1	128.1
50 to 99 employees-----	-	40	2.8	42.9	2.2	4.2	28.0	109.1	247.1	351.7	11.4	92.5
100 to 249 employees-----	-	13	1.5	23.7	1.2	2.5	17.2	44.6	139.2	179.4	3.8	37.7
Covered by administrative records ² -----	E9	143	.5	5.4	.4	.8	3.9	12.2	31.7	45.1	1.0	10.6
INDUSTRY 2492, PARTICLEBOARD												
Total-----	-	54	5.6	104.5	4.5	8.9	77.8	193.3	344.4	547.4	112.9	43.7
Establishments with an average of—												
1 to 4 employees-----	-	3	(Z)	(Z)	(Z)	(Z)	(Z)	.1	.1	.2	112.9	(Z)
5 to 9 employees-----	-	1	-	-	-	-	-	-	-	-	(D)	-
20 to 49 employees-----	-	4	.1	3.5	.1	.3	2.8	-1.7	10.5	17.3	(D)	1.0
50 to 99 employees-----	-	20	1.4	26.0	1.1	2.3	18.6	48.8	88.1	135.8	(D)	13.8
100 to 249 employees-----	-	25	4.1	75.0	3.3	6.3	56.4	146.3	245.8	394.0	(D)	28.8
250 to 499 employees-----	-	1	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
INDUSTRY 2499, WOOD PRODUCTS, N.E.C.												
Total-----	E2	3 387	60.6	799.6	49.4	90.0	559.3	1 645.6	1 677.8	3 347.8	142.3	541.5
Establishments with an average of—												
1 to 4 employees-----	E8	1 684	2.5	28.3	2.3	4.1	25.1	65.4	71.3	138.1	5.0	24.2
5 to 9 employees-----	E5	572	3.8	41.5	3.1	5.8	29.9	84.8	87.0	173.1	5.0	27.9
10 to 19 employees-----	E4	487	6.7	77.0	5.4	9.4	53.0	155.7	151.8	308.9	7.5	48.5
20 to 49 employees-----	E3	386	12.2	147.6	10.0	17.7	99.2	306.5	293.0	605.0	39.6	98.4
50 to 99 employees-----	E2	139	9.6	123.8	7.9	14.5	87.5	237.6	252.0	494.2	12.2	81.7
100 to 249 employees-----	-	90	13.8	183.3	11.5	21.3	132.1	377.1	394.6	770.7	28.3	116.1
250 to 499 employees-----	-	26	9.4	147.1	7.3	13.2	98.7	288.1	323.1	619.9	30.6	115.3
500 to 999 employees-----	-	2	2.7	50.8	1.9	3.8	33.8	130.5	104.9	237.9	14.0	29.5
1,000 to 2,499 employees-----	-	1	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Covered by administrative records ² -----	E9	1 433	3.3	29.9	2.9	5.2	24.7	64.6	73.7	140.3	4.3	24.0

Note: For qualifications of data, see footnotes on table 1a. Data shown as a (D) are included in underscored figures above.

¹Payroll and sales data for some small single-unit companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate the items shown for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at time data were tabulated. The following symbols are shown for those States where estimated data based on administrative records data account for 10 percent or more of figures shown: E1—10 to 19 percent; E2—20 to 29 percent; E3—30 to 39 percent; E4—40 to 49 percent; E5—50 to 59 percent; E6—60 to 69 percent; E7—70 to 79 percent; E8—80 to 89 percent; E9—90 percent or more.

²Report forms were not mailed to small single-unit companies with up to 20 employees (cutoff varied by industry). Payroll and sales data for 1982 were obtained from administrative records supplied by other agencies of the Federal Government. Those data were then used in conjunction with industry averages to estimate the items shown. Data are also included in respective size classes shown.

Table 5a. Industry Statistics by Industry and Primary Product Class Specialization: 1982

[Table presents selected statistics for establishments according to their degree of specialization in products primary to their industry. Measures of plant specialization shown are (1) industry specialization: ratio of primary product shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment; and (2) product class specialization: ratio of largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment. See appendix for method of computing ratios. Statistics for establishments with specialization ratios of less than 75 percent are included in total lines but are not shown as a separate class. In addition, data may not be shown for various reasons; e.g., to avoid disclosing data for individual companies. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes.]

Industry or product class code	Industry or product class by percent of specialization	All establishments (number)	All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)
			Number (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)				
2441	Nailed wood boxes and shooks:										
	Entire industry	338	6.4	76.5	5.3	9.4	56.0	137.9	166.7	306.8	6.9
	Establishments with 75 percent specialization or more ..	301	5.1	61.1	4.3	7.8	45.3	107.3	129.9	239.2	5.0
24411	Nailed or lock-corner wooden boxes:										
	Establishments with this product class primary	94	2.6	31.2	2.2	3.8	21.3	55.1	52.5	109.0	2.6
	Establishments with 75 percent specialization or more in class	72	2.0	22.9	1.6	2.9	15.4	40.6	35.8	77.8	1.9
24412	Wooden box and crate shooks:										
	Establishments with this product class primary	82	2.5	32.7	2.2	3.9	25.4	58.6	87.6	146.8	3.6
	Establishments with 75 percent specialization or more in class	58	1.7	21.7	1.4	2.7	17.6	35.7	60.3	96.5	1.7
2448	Wood pallets and skids:										
	Entire industry	1 677	22.1	230.4	18.4	32.7	165.0	420.5	589.1	1 012.3	29.4
	Establishments with 75 percent specialization or more ..	1 575	19.5	199.8	16.3	28.6	142.7	366.8	517.5	886.6	26.4
2449	Wood containers, n.e.c.:										
	Entire industry	235	7.4	84.0	6.5	12.5	65.9	144.6	168.8	315.8	3.7
	Establishments with 75 percent specialization or more ..	221	6.7	75.8	5.9	11.3	59.5	132.1	158.2	292.7	3.4
2491	Wood preserving:										
	Entire industry	524	10.9	159.4	8.6	16.5	108.2	383.7	978.5	1 360.2	35.9
	Establishments with 75 percent specialization or more ..	498	10.4	151.6	8.1	15.5	102.8	367.3	946.7	1 313.3	35.3
24912	Treated wood poles, piles, and posts:										
	Establishments with this product class primary	107	4.2	66.4	3.3	6.4	46.2	148.1	360.3	511.8	16.6
	Establishments with 75 percent specialization or more in class	80	2.8	43.2	2.2	4.3	30.1	95.5	218.3	318.6	9.8
24913	Other treated wood products:										
	Establishments with this product class primary	151	4.3	60.3	3.3	6.4	39.3	155.6	465.9	612.0	12.0
	Establishments with 75 percent specialization or more in class	108	3.0	41.9	2.3	4.4	27.4	109.0	357.2	456.9	9.5
24919	Contract wood preserving:										
	Establishments with this product class primary	30	.8	12.8	.7	1.3	9.1	36.9	45.3	82.1	2.8
	Establishments with 75 percent specialization or more in class	20	.5	7.9	.4	.7	5.5	23.2	24.7	47.6	1.5
2492	Particleboard:										
	Entire industry	54	5.6	104.5	4.5	8.9	77.8	193.3	344.4	547.4	112.9
	Establishments with 75 percent specialization or more ..	51	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
2499	Wood products, n.e.c.:										
	Entire industry	3 387	60.6	799.6	49.4	90.0	559.3	1 645.6	1 677.8	3 347.8	142.3
	Establishments with 75 percent specialization or more ..	3 271	55.3	727.3	45.2	82.6	507.9	1 491.0	1 503.3	3 017.3	136.5
24991	Mirror and picture frames:										
	Establishments with this product class primary	180	10.6	128.2	8.2	14.7	80.4	290.3	217.9	506.7	44.6
	Establishments with 75 percent specialization or more in class	162	10.1	122.0	7.8	13.9	76.0	277.5	208.2	484.4	44.4
24992	Cork and cork products:										
	Establishments with this product class primary	12	.6	9.3	.4	.7	5.4	20.1	23.4	44.3	.8
	Establishments with 75 percent specialization or more in class	9	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
24993	Medium density fiberboard (MDF):										
	Establishments with this product class primary	11	1.4	25.7	1.1	2.2	18.2	59.2	80.6	139.2	5.2
	Establishments with 75 percent specialization or more in class	11	1.4	25.7	1.1	2.2	18.2	59.2	80.6	139.2	5.2
24995	Prefinished particleboard and medium fiberboard (MDF) made from purchased particleboard and MDF:										
	Establishments with this product class primary	50	1.2	17.3	1.0	1.9	12.0	34.9	50.1	84.3	2.1
	Establishments with 75 percent specialization or more in class	45	.9	13.1	.7	1.4	8.8	28.2	41.6	69.1	1.7
24996	Hardboard products made from own hardboard:										
	Establishments with this product class primary	26	5.9	119.6	4.5	8.9	82.1	241.7	315.3	564.6	25.1
	Establishments with 75 percent specialization or more in class	22	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
24998	Hardboard products made from purchased hardboard:										
	Establishments with this product class primary	38	2.1	33.0	1.6	2.8	20.9	72.1	101.6	174.7	3.8
	Establishments with 75 percent specialization or more in class	29	1.3	19.3	1.0	2.0	13.3	33.4	54.0	88.4	2.8
2499A	Miscellaneous wood products:										
	Establishments with this product class primary	704	24.7	312.9	20.8	37.3	227.8	620.8	570.5	1 201.6	39.6
	Establishments with 75 percent specialization or more in class	631	21.2	262.5	18.0	32.4	193.1	510.1	473.1	993.3	35.3

Note: For qualifications of data, see footnotes on table 1a.

Table 5b. Industry-Product Analysis—Value of Shipments and Primary Product Shipments, Specialization and Coverage Ratios for the Industry: 1982 and Earlier Census Years

[An establishment is assigned to an industry based on shipment values of products representing largest amount considered primary to an industry. Frequently, establishment shipments comprise mixtures of products assigned to an industry (primary), those considered primary to other industries (secondary), and receipts for activities such as merchandising or contract work. Columns A-D show this product pattern for an industry, and column E shows primary product specialization ratio. The extent to which an industry's primary products are shipped by establishments classified in and out of an industry is shown in columns F-H and coverage ratio is shown in column I. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Industry and product group code	Industry and census year	Value of shipments					Value of primary product shipments			
		Total (million dollars)	Primary products (million dollars)	Secondary products (million dollars)	Miscellaneous receipts (million dollars)	Primary product specialization ratio Col. B ÷ Col. B + C (percent)	Total made in all industries (million dollars)	Made in this industry (million dollars)	Made in other industries (million dollars)	Coverage ratio Col. B ÷ Col. F (percent)
		A	B	C	D	E	F	G	H	I
2441	Nailed wood boxes and shook ----- 1982--	306.8	254.1	29.6	23.0	90	314.6	254.1	60.5	81
	1977--	263.3	220.2	27.8	15.2	89	265.3	220.2	45.1	83
	1972--	237.9	201.6	28.8	7.5	88	232.8	201.6	31.2	87
2448	Wood pallets and skids ----- 1982--	1 012.3	904.9	73.9	33.5	92	969.7	904.9	64.8	93
	1977--	698.0	587.9	63.5	46.6	90	642.9	587.9	55.0	91
	1972--	295.4	253.7	24.3	17.4	91	287.4	253.7	33.7	88
2449	Wood containers, n.e.c. ----- 1982--	315.8	286.4	15.2	14.2	95	295.6	286.4	9.2	97
	1977--	255.8	228.5	16.1	11.1	93	235.3	228.5	6.8	97
	1972--	240.2	215.4	12.9	11.9	94	218.7	215.4	3.3	98
2491	Wood preserving ----- 1982--	1 360.2	1 269.6	26.7	63.9	98	1 325.0	1 269.6	55.4	96
	1977--	962.6	869.2	25.8	67.6	97	892.2	869.2	23.0	97
	1972--	475.8	443.8	5.8	26.2	99	461.3	443.8	17.5	96
2492	Particleboard ----- 1982--	547.4	528.8	14.1	4.5	97	553.7	528.8	24.9	96
	1977--	452.9	450.3	1.0	1.6	99	476.5	450.3	26.2	95
	1972--	295.4	267.3	25.1	3.0	91	286.2	267.3	18.9	93
2499	Wood products, n.e.c. ----- 1982--	3 347.8	3 088.9	165.6	93.3	95	3 300.7	3 088.9	211.9	94
	1977--	2 557.6	2 312.2	154.3	91.0	94	2 488.7	2 312.2	176.5	93
	1972--	1 518.9	1 345.0	105.4	68.5	93	1 479.1	1 345.0	134.1	91

Table 5c-1. Industry-Product Analysis—Shipments by Product Class and Industry: 1982

[Million dollars. Table shows where products of an industry (referred to as primary and listed in table 6a) are made and what products are made by establishments classified in an industry. Read down an industry column to find what products are produced in an industry. Only those product groups that have at least \$2 million in shipments from establishments classified in one of industries included in this chapter are shown. Read across to determine where products of industries in this chapter are produced. To extent that some of primary products are made in industries not included in this chapter, value of such shipments is shown in "Other industries" column. Specified "Other industries" are listed in table 5c-2 if they account for more than \$5 million of products primary to this chapter. For meaning of abbreviations and symbols, see explanatory text. For explanation of terms, see appendixes]

1982 product code	Product group, product class, and miscellaneous receipts	All industries	Nailed wood boxes and shook (SIC 2441)	Wood pallets and skids (SIC 2448)	Wood containers, n.e.c. (SIC 2449)	Wood preserving (SIC 2491)	Particleboard (SIC 2492)	Wood products, n.e.c. (SIC 2499)	Other industries
	Total -----	(X)	306.8	1 012.3	315.8	1 360.3	547.4	3 347.8	(X)
	Primary products -----	(X)	254.1	904.9	286.4	1 269.6	528.8	3 088.9	(X)
	Secondary products -----	(X)	29.6	73.9	15.2	26.7	14.1	165.6	(X)
	Miscellaneous receipts -----	(X)	23.0	33.5	14.2	63.9	4.5	93.3	(X)
2441-	Nailed wood boxes and shook -----	314.6	254.1	26.1	(D)	-	-	(D)	(D)
24411	Nailed or lock-corner wooden boxes -----	109.0	95.6	6.7	(D)	-	-	(D)	(D)
24412	Wooden box and crate shook -----	156.2	110.5	18.9	2.4	-	-	-	24.4
24410	Nailed wood boxes and shook, n.s.k. -----	49.4	48.0	.5	-	-	-	-	.9
24480	Pallets and skids -----	969.7	14.4	904.9	2.7	(D)	-	3.8	(D)
24490	Wood containers, n.e.c. -----	295.6	1.3	5.0	286.4	-	-	-	2.8
2491-	Wood preserving -----	1 325.0	-	(D)	-	1 269.6	-	(D)	55.2
24912	Treated wood poles, piles, and posts -----	461.1	-	(D)	-	(D)	-	-	22.3
24913	Other treated wood products -----	617.4	-	(D)	-	586.0	-	(D)	(D)
24919	Contract wood preserving -----	94.9	-	-	-	94.2	-	-	.7
24910	Wood preserving, n.s.k. -----	151.6	-	-	-	(D)	-	-	(D)
24920	Particleboard -----	553.7	-	-	-	-	528.8	2.0	22.9
2499-	Wood products, n.e.c. -----	3 300.7	(D)	1.8	(D)	(D)	13.7	3 088.9	195.4
24991	Mirror and picture frames -----	505.5	-	-	-	-	-	480.6	24.8
24992	Cork and cork products -----	40.9	-	-	-	-	-	35.8	5.1
24993	Medium density fiberboard (MDF) -----	144.7	-	-	-	-	(D)	(D)	-
24995	Prefinished particleboard and medium fiberboard (MDF) made from purchased particleboard and MDF -----	110.3	-	-	-	-	(D)	(D)	21.8
24996	Hardboard products made from own hardboard -----	558.3	-	-	-	-	(D)	547.9	(D)
24998	Hardboard products made from purchased hardboard -----	148.1	-	-	-	-	(D)	(D)	(D)
2499A	Miscellaneous wood products -----	1 199.4	(D)	(D)	(D)	(D)	-	1 072.9	124.6
24990	Wood products, n.e.c., n.s.k. -----	593.6	(D)	(D)	(D)	-	-	589.6	3.1

See footnotes at end of table.

Table 5c-1. Industry-Product Analysis—Shipments by Product Class and Industry: 1982—Con.

[Million dollars. Table shows where products of an industry (referred to as primary and listed in table 6a) are made and what products are made by establishments classified in an industry. Read down an industry column to find what products are produced in an industry. Only those product groups that have at least \$2 million in shipments from establishments classified in one of industries included in this chapter are shown. Read across to determine where products of industries in this chapter are produced. To extent that some of primary products are made in industries not included in this chapter, value of such shipments is shown in "Other industries" column. Specified "Other industries" are listed in table 5c-2 if they account for more than \$5 million of products primary to this chapter. For meaning of abbreviations and symbols, see explanatory text. For explanation of terms, see appendixes]

1982 product code	Product group, product class, and miscellaneous receipts	All industries	Nailed wood boxes and shook (SIC 2441)	Wood pallets and skids (SIC 2448)	Wood containers, n.e.c. (SIC 2449)	Wood preserving (SIC 2491)	Particleboard (SIC 2492)	Wood products, n.e.c. (SIC 2499)	Other industries
	OTHER SHIPMENTS BY FOUR-DIGIT PRODUCT GROUP								
2392-	House furnishings, n.e.c.	(X)	-	-	-	-	-	(D)	(X)
2411-	Logging products and contract logging	(X)	(D)	1.8	-	3.1	(D)	8	(X)
2421-	Sawmill and planing mill products	(X)	4.4	35.9	3.7	17.5	-	14.4	(X)
2426-	Hardwood dimension and flooring	(X)	(D)	(D)	-	-	-	6.0	(X)
2431-	Millwork	(X)	(D)	-	-	-	-	4.2	(X)
2435-	Hardwood veneer and plywood	(X)	(D)	-	(D)	-	-	3.3	(X)
2436-	Softwood veneer and plywood	(X)	-	(D)	(D)	-	-	(D)	(X)
2511-	Wood household furniture	(X)	(D)	(D)	-	-	-	8.4	(X)
2542-	Metal partitions and fixtures	(X)	-	-	-	-	-	(D)	(X)
2661-	Building paper and board	(X)	-	-	-	-	-	(D)	(X)
3079-	Miscellaneous plastics products	(X)	-	-	(D)	-	-	35.8	(X)
3161-	Luggage	(X)	-	-	-	-	-	(D)	(X)
3231-	Products of purchased glass	(X)	-	-	-	-	-	6.5	(X)
3442-	Metal doors, sash, and trim	(X)	-	-	-	-	-	8.3	(X)
3499-	Fabricated metal products, n.e.c.	(X)	-	-	-	-	-	5.2	(X)
3842-	Surgical appliances and supplies	(X)	(D)	-	-	-	-	(D)	(X)
3873-	Watches, clocks, and watchcases	(X)	-	-	-	-	-	7.1	(X)
3949-	Sporting and athletic goods, n.e.c.	(X)	-	-	-	-	-	(D)	(X)
	MISCELLANEOUS RECEIPTS								
93000 00	Receipts for work done for others on their materials	(X)	6.2	3.3	(D)	10.8	(D)	24.7	(X)
99980 13	Sales of scrap and refuse	(X)	.4	2.6	(D)	(D)	3.1	4.4	(X)
99980 98	Other miscellaneous receipts, including receipts for repair work, etc.	(X)	.5	4.0	1.0	7.9	1.0	2.7	(X)
99980 00	Miscellaneous receipts, n.s.k.	(X)	.2	1.6	-	(D)	(D)	4.1	(X)
99989 00	Sales of products bought and resold without further manufacture, processing, or assembly at establishment	(X)	15.7	22.0	3.9	43.2	.4	57.4	(X)

Table 5c-2. Industry-Product Analysis—Other Industries With Shipments of Primary Products: 1982

[Million dollars. Table is a continuation of table 5c-1 and shows where products of industries in this chapter (referred to as primary products and listed in table 6a) are made. To extent that some of primary products are made in industries not included in this chapter, value of such shipments is shown in "Other industries" column of table 5c-1. Specified "Other industries" are listed in this table if they account for more than \$5 million of products primary to this chapter. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

1982 product code	Other industries	Value	1982 product code	Other industries	Value
2441-	NAILED WOOD BOXES AND SHOOK		2499-	WOOD PRODUCTS, N.E.C.	
	2421 Sawmills and planing mills, general	17.5		2421 Sawmills and planing mills, general	6.5
2448-	WOOD PALLETS AND SKIDS			2426 Hardwood dimension and flooring	7.4
	2421 Sawmills and planing mills, general	31.4		2431 Millwork	21.5
2491-	WOOD PRESERVING			2435 Hardwood veneer and plywood	7.9
	2421 Sawmills and planing mills, general	52.2		2511 Wood household furniture	7.9
2492-	PARTICLEBOARD			2541 Wood partitions and fixtures	5.2
	2421 Sawmills and planing mills, general	(D)		2649 Converted paper products, n.e.c.	(D)
				2661 Building paper and board mills	(D)
				3079 Miscellaneous plastics products	11.6
				3231 Products of purchased glass	(D)
				3275 Gypsum products	(D)
				3499 Fabricated metal products, n.e.c.	7.9
				3999 Manufacturing industries, n.e.c.	15.3

Table 6a. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1982 and 1977

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see introductory text]

1982 product code	Product	1982			1977		
		Number of companies with shipments of \$100,000 or more	Product shipments ¹		Number of companies with shipments of \$100,000 or more	Product shipments ¹	
			Quantity ²	Value (million dollars)		Quantity ²	Value (million dollars)
NAILED WOOD BOXES AND SHOOK							
2441- --	Total -----	(NA)	(X)	314.6	(NA)	(X)	265.3
24411 --	Nailed or lock-corner wooden boxes -----	(NA)	(X)	109.0	(NA)	(X)	93.8
24411 25	Made from lumber: For fruits, vegetables, milk bottles and cartons, and soft drink bottles ----- mil bd ft lum						
	cons.----- do--	17	(S)	10.6	16	*76.3	25.7
24411 51	For industrial and other uses ----- do--	71	(S)	53.4	43	105.7	31.1
24411 65	Made from veneer and plywood for fruits, vegetables, industrial, and other uses ----- mil sq ft sm--	20	(S)	20.5	16	78.7	11.6
24411 83	Combination wood and fiber boxes, including wood and part wooden cigar boxes ----- mil						
	containers-----	8	(S)	4.4	13	(S)	9.1
24411 00	Nailed or lock-corner wooden boxes, n.s.k. -----	(NA)	(X)	20.0	(NA)	(X)	16.3
24412 --	Wooden box and crate shook -----	(NA)	(X)	156.2	(NA)	(X)	127.0
24412 11	Made from lumber: For fruits and vegetables ----- mil bd ft--	25	*229.0	62.0	21	184.1	49.6
24412 15	For industrial and other uses ----- do--	91	(S)	60.4	69	*147.0	46.3
24412 25	Made from veneer and plywood for fruits, vegetables, meat, industrial, and other uses ----- mil sq ft sm--	34	(S)	24.6	19	(S)	18.6
24412 00	Wooden box and crate shook, n.s.k. -----	(NA)	(X)	9.3	(NA)	(X)	12.5
24410 00	Nailed wooden boxes and shook, n.s.k., typically for establishments with 5 employees or more (see note) -----	(NA)	(X)	40.0	(NA)	(X)	30.8
24410 02	Nailed wooden boxes and shook, n.s.k., typically for establishments with less than 5 employees (see note) -----	(NA)	(X)	9.4	(NA)	(X)	13.7
WOOD PALLETS AND SKIDS							
2448- --	Total -----	(NA)	(X)	969.7	(NA)	(X)	642.9
24480 --	Pallets and skids:						
24480 62	Pallets, wooden, flat ----- mil units--	582	(S)	511.8	202	**73.8	300.9
24480 64	Pallet containers ----- do--	35	(S)	37.7	29	(S)	22.9
24480 65	Skids, wooden ----- do--	109	(S)	61.9	73	(S)	52.2
24480 66	Pallets and skids, wood and metal combination ----- do--	54	(S)	49.6	26	(S)	25.6
24480 00	Wood pallets and skids, n.s.k., typically for establishments with 5 employees or more (see note) -----	(NA)	(X)	224.1	(NA)	(X)	162.5
24480 02	Wood pallets and skids, n.s.k., typically for establishments with less than 5 employees (see note) -----	(NA)	(X)	84.6	(NA)	(X)	78.8
WOOD CONTAINERS, N.E.C.							
2449- --	Total -----	(NA)	(X)	295.6	(NA)	(X)	235.3
24490 --	Wood containers, n.e.c.:						
24490 11	Wirebound boxes made from lumber ----- mil boxes--	16	(S)	30.8	15	7.9	48.2
24490 21	Wirebound boxes made from veneer and plywood: For fruits and vegetables ----- do--	15	55.6	60.4	19	58.4	44.7
24490 41	For meats and poultry (other than canned) ----- do--	4	2.4	4.2	4	12.2	10.4
24490 51	For industrial and other uses ----- do--	10	(S)	30.4	12	5.1	23.1
24490 61	Veneer and plywood containers, including pails, drums, tubs, fruit and vegetable baskets, and hampers, etc. ----- mil						
	containers-----	21	(S)	31.8	19	(S)	27.3
24490 71	Slack cooperage (hogsheads, barrels, and kegs, etc.), new and recoopered used ----- mil units--	6	(S)	20.6	7	1.2	9.6
24490 81	Tight cooperage (hogsheads, barrels, and kegs, tubs, etc.), new and recoopered used ----- do--	15	(S)	82.3	(NA)	(S)	47.8
24490 00	Wood containers, n.e.c., n.s.k., typically for establishments with 5 employees or more (see note) -----	(NA)	(X)	25.7	(NA)	(X)	*14.7
24490 02	Wood containers, n.e.c., n.s.k., typically for establishments with less than 5 employees (see note) -----	(NA)	(X)	9.3	(NA)	(X)	9.5
WOOD PRESERVING							
2491- --	Total -----	(NA)	(X)	1 325.0	(NA)	(X)	892.2
24912 --	Wood poles, piles, and posts owned and treated by same establishment -----	(NA)	(X)	461.1	(NA)	(X)	305.5
24912 11	15 ft or less in length ----- thousands--	51	(S)	78.2	36	(S)	45.5
24912 13	More than 15 ft in length ----- do--	57	*4 371.7	340.5	53	**3 510.9	220.7
24912 00	Wood poles, piles, and posts owned and treated by same establishment, n.s.k. -----	(NA)	(X)	42.3	(NA)	(X)	39.3
24913 --	Other wood products owned and treated by same establishment -----	(NA)	(X)	617.4	(NA)	(X)	418.3
24913 11	Railway cross ties and mine ties (except switch or bridge) -- thousands--	31	11 556.0	160.1	25	11 772.7	137.5
24913 13	Lumber, timber, and wood siding, rough and worked (includes softwood flooring and cross-arms) ----- mil bd ft--	105	*1 063.3	355.0	67	*556.0	186.4
24913 15	Wood fence pickets, paling, and rails, whether or not assembled into fence sections ----- thousands--	10	(X)	12.0	7	(X)	4.4
24913 17	Switch and bridge ties ----- thousands--	11	(S)	11.1	9	**1 405.8	11.9
24913 19	Other wood treated products n.e.c., including plywood -----	12	(X)	25.2	14	(X)	28.6
24913 00	Other wood products owned and treated by same establishment, n.s.k. -----	(NA)	(X)	54.0	(NA)	(X)	49.5
24919 --	Contract wood preserving:						
24919 00	Contract wood treating service (receipts for treating wood owned by other establishments) -----	*60	(X)	94.9	46	(X)	68.6
24910 00	Wood preserving, n.s.k., typically for establishments with 5 employees or more (see note) -----	(NA)	(X)	106.5	(NA)	(X)	72.7

See footnotes at end of table.

Table 6a. **Product and Product Classes—Quantity and Value of Shipments by All Producers:**
1982 and 1977—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see introductory text]

1982 product code	Product	1982			1977		
		Number of companies with shipments of \$100,000 or more	Product shipments ¹		Number of companies with shipments of \$100,000 or more	Product shipments ¹	
			Quantity ²	Value (million dollars)		Quantity ²	Value (million dollars)
	WOOD PRESERVING—Con.						
24910 02	Wood preserving, n.s.k., typically for establishments with less than 5 employees (see note) -----	(NA)	(X)	45.1	(NA)	(X)	27.1
	PARTICLEBOARD						
2492—	Total -----	(NA)	(X)	553.7	(NA)	(X)	476.5
24920 —	Particleboard (particleboard products (produced by reported establishment) including wood board made from flakes, splinters, shavings, or other wood residue, with urea, phenolic, or other resins added as a binder and bonded together under heat and pressure) ³ :						
24920 03	Floor underlayment ----- mil sq ft 3/4 in. basis..	14	702.7	93.8	19	1 068.2	122.0
24920 05	Mobile home decking ----- do..	9	214.6	45.5	12	328.3	40.8
24920 07	Shelving ----- do..	12	52.7	10.1	10	140.6	22.2
24920 09	Door core ----- do..	7	**155.2	26.3	6	173.7	21.4
	Other industrial board:						
24920 12	3/4 in. thick ----- do..	19	592.2	128.3	17	757.8	98.7
24920 14	5/8 in. thick ----- do..	16	279.8	65.0	15	218.8	33.2
24920 16	1/2 in. thick ----- do..	16	139.0	28.8	13	165.3	24.8
24920 18	All other ----- do..	19	529.0	110.7	16	538.3	81.5
24920 19	Other (stepping, siding, etc.) ----- do..	10	164.2	33.0	6	120.0	18.5
24920 00	Particleboard, n.s.k., typically for establishments with 5 employees or more (see note) -----	(NA)	(X)	12.3	(NA)	(X)	*13.4
24920 02	Particleboard, n.s.k., typically for establishments with less than 5 employees (see note) -----	(NA)	(X)	-	(NA)	(X)	-
	WOOD PRODUCTS, N.E.C.						
2499—	Total -----	(NA)	(X)	3 300.7	(NA)	(X)	2 488.7
24991 —	Mirror and picture frames -----	(NA)	(X)	505.5	(NA)	(X)	314.6
24991 11	Frames for mirrors and pictures:						
24991 15	Wood -----	71	(X)	137.1	59	(X)	90.4
	Metal -----	20	(X)	71.8	17	(X)	82.6
24991 31	Finished moldings for mirrors and pictures:						
24991 41	Wood ----- mil linear ft..	26	(S)	45.7	24	**106.5	31.7
	Other than wood (metal, plastics, fiber) ----- do..	9	(S)	44.7	7	(S)	31.8
24991 61	Framed pictures:						
24991 71	Wood -----	31	(X)	128.3	27	(X)	43.5
24991 00	Other than wood (metal, plastics, fiber) -----	17	(X)	50.8	12	(X)	11.9
	Mirror and picture frames, n.s.k. -----	(NA)	(X)	27.1	54	(X)	22.7
24992 —	Cork and cork products -----	(NA)	(X)	40.9	(NA)	(X)	32.8
24992 21	Cork, natural and waste, including granulated and ground ----- 1,000 lb..	4	(D)	(D)	4	9 965.4	5.6
24992 97	Other articles made of natural, granulated, and composition cork (cork disks and washers, shoe fittings, life-preserver blocks, cork flats, life preservers, expansion joint material, newspaper mats, novelties, sheets, blocks, stoppers of all kinds, insulation products, and floor and wall coverings) -----	18	(X)	39.8	11	(S)	26.7
24992 00	Cork products, n.s.k. -----	(NA)	(X)	(D)	(NA)	(X)	5
24993 —	Medium density fiberboard (MDF) produced at this location -----	(NA)	(X)	144.7	(NA)	(X)	84.2
24993 14	Not coated:						
	Standard panel ----- mil sq ft 3/4 in. basis..	7	*319.7	99.2	6	186.0	34.3
24993 15	Cut to size ----- do..	4	57.2	21.0	10	*90.2	19.8
24993 16	Coated or prefinished:						
24993 17	Standard panel ----- do..	3	(S)	(S)	4	*230.1	*28.9
24993 00	Cut to size ----- do..	1	**129.9	*24.0	7		
	Medium density fiberboard (MDF), produced at this location, n.s.k. -----	(NA)	(X)	.6	(NA)	(X)	1.2
24995 —	Prefinished particleboard and medium density fiberboard (MDF) made from purchased particleboard and MDF -----	(NA)	(X)	110.3	(NA)	(X)	*84.9
24995 21	Prefinished particleboard made from purchased particleboard ----- mil sq ft 3/4 in. basis..	45	**768.0	98.4	25	(X)	84.9
24995 31	Prefinished or coated medium density fiberboard (MDF) made from purchased MDF ----- do..	11	**29.2	11.9	(NA)	(*)	(*)
24995 00	Prefinished particleboard and medium density fiberboard (MDF) made from particleboard and MDF, n.s.k. -----	(NA)	(X)	-	(NA)	(X)	-

See footnotes at end of table.

Table 6a. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1982 and 1977—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see introductory text]

1982 product code	Product	1982			1977		
		Number of companies with shipments of \$100,000 or more	Product shipments ¹		Number of companies with shipments of \$100,000 or more	Product shipments ¹	
			Quantity ²	Value (million dollars)		Quantity ²	Value (million dollars)
	WOOD PRODUCTS, N.E.C.—Con.						
24996 —	Hardboard products made from hardboard produced at this location	(NA)	(X)	558.3	(NA)	(X)	508.0
24996 12	Basic hardboard (not machined or face finished):						
	Standard:						
	As reported in the census of manufactures _____ mil sq ft 1/8 in. basis..	9	(S)	79.1	(NA)		
24996 13	As reported in Current Industrial Report MA-26A, Pulp, Paper, and Board _____ do..	(NA)	*928.5	*81.8	(NA)		
	Tempered:						
	As reported in the census of manufactures _____ do..	7	(D)	(D)	(NA)		
24996 15	As reported in Current Industrial Report MA-26A, Pulp, Paper, and Board _____ do..	(NA)	(D)	(D)	(NA)		
	Service and other basic hardboard:						
	As reported in the census of manufactures _____ do..	5	70.6	6.2	(NA)		
24996 16	As reported in Current Industrial Report, MA-26A, Pulp, Paper, and Board _____ do..	(NA)	*68.4	6.2	(NA)		
	Machined and cut hardboard, including molded, cut to size, perforated, panel stock, etc. (not face finished):						
	As reported in the census of manufactures _____ do..	7	**580.6	56.7	(NA)		
	As reported in Current Industrial Report MA-26A, Pulp, Paper, and Board _____ do..	(NA)	*565.9	53.9	(NA)		
24996 17	Coated or laminated hardboard:					(?)	(?)
	Interior paneling:						
	As reported in the census of manufactures _____ do..	9	1 091.3	115.9	(NA)		
	As reported in Current Industrial Report MA-26A, Pulp, Paper, and Board _____ do..	(NA)	*842.3	*119.6	(NA)		
24996 18	Exterior siding:						
	As reported in the census of manufactures _____ do..	6	2 476.0	228.9	(NA)		
	As reported in Current Industrial Report MA-26A, Pulp, Paper, and Board _____ do..	(NA)	2 475.1	228.2	(NA)		
24996 19	Other, including doorskins, garage door panels, and furniture stock:						
	As reported in the census of manufactures _____ do..	5	(D)	(D)	(NA)		
	As reported in Current Industrial Report MA-26A, Pulp, Paper, and Board _____ do..	(NA)	(D)	(D)	(NA)		
24996 00	Hardboard products made from hardboard produced at this location, n.s.k.:						
	As reported in the census of manufactures _____ do..	(NA)	(X)	4.9	(NA)		
	As reported in Current Industrial Report MA-26A, Pulp, Paper, and Board _____ do..	(NA)	(X)	—	(NA)		
24998 —	Hardboard products made from purchased hardboard	(NA)	(X)	148.1	(NA)		
24998 14	Molded and cut to size (not face finished) _____ mil sq ft 1/8 in. basis..	4	**83.6	16.8	(NA)		
24998 15	Other machined and cut, including perforated, panel stock, etc. (not face finished) _____ do..	5	(S)	16.7	(NA)	(X)	171.3
24998 16	Coated or laminated hardboard:						
	Interior paneling _____ do..	8	**536.3	44.5	(NA)		
24998 17	Other, including doorskins, garage door panels, furniture stock, and siding _____ do..	13	212.5	39.1	(NA)		
24998 00	Hardboard products made from purchased hardboard, n.s.k. _____ do..	(NA)	(X)	30.4	(NA)		
2499A —	Miscellaneous wood products	(NA)	(X)	1 199.4	(NA)	(X)	921.0
2499A 11	Jewelry boxes, silverware chests, instrument cases, cigar and cigarette boxes, microscope cases, tool or utensil cases and similar boxes, cases; and chests _____ do..	27	(X)	25.9	18	(X)	19.1
2499A 13	Wood carvings, except millwork and furniture _____ do..	16	(X)	9.2	14	(X)	8.0
2499A 15	Household type utensils of wood and parts thereof, n.e.c., including coat and garment hangers, wooden ware, bookends, ashtrays, etc. _____ do..	55	(X)	87.1	37	(X)	44.1
2499A 17	Wood fences, palings, and rails assembled into fence sections _____ do..	37	(X)	19.3	22	(X)	18.3
2499A 19	Toothpicks, skewers, candy sticks, ice cream sticks, tongue depressors, drink mixers, and similar small wares _____ do..	10	(X)	43.5	15	(X)	27.3
2499A 23	Firewood and fuel wood containing an added binder, including compressed logs _____ do..	12	(X)	17.8	13	(X)	38.3
2499A 25	Bamboo, rattan, willow and chip, basketwork, wicker work, and related products of fibrous vegetable substances _____ do..	7	(X)	11.7	9	(X)	10.3
2499A 27	Spools and bobbins, including textile machinery spools _____ do..	4	(X)	2.6	5	(X)	4.3
2499A 41	Lasts for boots and shoes, wood and other materials; remodeled last sole patterns, forms, shoe trees; and stretchers for boots and shoes _____ do..	11	(X)	9.0	(NA)	(X)	(*)
2499A 51	Hand tool handles:						
	Striking tool handles (axe, pick, hammer, etc.) _____ do..	19	(X)	31.7	17	(X)	32.8
2499A 53	Lifting and pulling tool handles (fork, rake, spade, shovel, etc.) _____ do..	8	(X)	8.1	8	(X)	11.3
2499A 55	Other hand tool handles (peavey, scythe, shunt pole, cant hook, and other mechanics, farm, garden, household, etc.) _____ do..	11	(X)	8.6	17	(X)	7.9
2499A 57	Broom, mop, and paint brush handles _____ do..	22	(X)	32.3	19	(X)	27.5
2499A 59	Other handles _____ do..	22	(X)	18.8	11	(X)	7.4
2499A 60	Wooden tools, tool bodies, and backs for brooms, mops, and brushes _____ do..	5	(X)	2.0	4	(X)	2.7
2499A 61	Clothespins _____ mil groses..	4	(S)	12.5	5	(X)	7.4
2499A 62	Dowels and dowel pins (plain or sanded, grooved, or otherwise advanced in condition) _____ do..	27	(X)	93.7	27	(X)	33.1
2499A 63	Pencil slats _____ do..	1	(X)	(D)	5	(X)	45.3
2499A 64	Tanks and vats, wooden, except coopered _____ do..	5	(X)	3.5	8	(X)	11.0
2499A 71	Stepladders _____ mil linear ft..	23	(S)	38.1	28	**19.1	38.3

See footnotes at end of table.

Table 6a. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1982 and 1977—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see introductory text]

1982 product code	Product	1982			1977		
		Number of companies with shipments of \$100,000 or more	Product shipments ¹		Number of companies with shipments of \$100,000 or more	Product shipments ¹	
			Quantity ²	Value (million dollars)		Quantity ²	Value (million dollars)
	WOOD PRODUCTS, N.E.C.—Con.						
2499A —	Miscellaneous wood products —Con.						
2499A 75	Rung ladders (nonextension, extension, and scaffolding ladders)	22	(S)	19.0	26	(S)	25.8
2499A 79	Other scaffolding equipment (horses, scaffold jacks, extension planks, window jacks, etc.)	5	(X)	(D)	3	(X)	3.0
2499A 85	Wooden reels for wire and cable	26	(X)	102.2	23	(X)	62.7
2499A 89	Wood flour 1,000 s tons..	10	(S)	9.2	16	**284.3	21.9
2499A 91	Other fabricated industrial parts, except hardwood furniture parts	8	(S)	23.0	4	(S)	3.7
2499A 94	Toilet seats:	7	(S)	34.6	8	(S)	38.3
2499A 97	Plastics, solid, and cored, including hard rubber	9	(S)	52.0	5	9.8	31.1
2499A 98	Wood, including molded wood						
	Miscellaneous wooden products, n.e.c., including articles of wood, not elsewhere specified, and wood turnings (except handles and spools)	411	(X)	368.7	(NA)	(X)	*321.9
2499A 00	Miscellaneous wooden products, n.e.c., n.s.k.	(NA)	(X)	88.9	(NA)	(X)	18.3
24990 00	Wood products, n.e.c., n.s.k., typically for establishments with 5 employees or more (see note)	(NA)	(X)	453.3	(NA)	(X)	278.6
24990 02	Wood products, n.e.c., n.s.k., typically for establishments with less than 5 employees (see note)	(NA)	(X)	140.3	(NA)	(X)	93.4

Note: In 1982 Census of Manufactures, data for establishments of small single-unit companies with up to 20 employees were estimated from administrative-record data rather than data actually collected from respondents. Employment cutoff used for administrative records for each industry and shipments figures are included in code ending with "002". In both 1982 and 1977 Censuses of Manufactures, products not completely identified on standard forms were coded in appropriate product class (five-digit) followed by "00" or to appropriate product group code (four-digit) followed by "000".

¹Data reported by all producers, not just those with shipments of \$100,000 or more.

²For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: * 10 to 19 percent estimated; ** 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by (S).

³The manufacture of waferboard and orientated strand board also is included in the particleboard industry.

⁴For 1977, extruded type particleboard was included in product code 24920 00.

⁵For 1982, product code 24993 16 is included with product code 24993 17 to avoid disclosing data for individual companies.

⁶For 1977, product code 24995 31 was included with product codes 24993 16 and 24993 17.

⁷For 1977, comparable data are not available. Current product format was introduced in the Current Industrial Report MA-26A in 1981.

⁸For 1977, product code 2499A 41 was included with product code 2499A 98.

Table 6b. Product Classes—Value of Shipments by All Producers for Specified States: 1982 and 1977

[Million dollars. Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in table 2. Also, product classes are not shown if they are miscellaneous or "not specified by type" classes. Statistics for some States are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1982. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendices]

Product class and geographic area	1982 value of product shipments	1977 value of product shipments	Product class and geographic area	1982 value of product shipments	1977 value of product shipments
24411, NAILED OR LOCK-CORNER WOODEN BOXES			24412, WOODEN BOX AND CRATE SHOOK—Con.		
United States	109.0	93.8	New York	3.4	3.0
California	29.3	16.1	North Carolina	2.9	1.4
Michigan	2.1	2.4	Ohio	4.0	2.4
New York	4.3	3.9	Pennsylvania	4.6	2.5
North Carolina	6.0	(BB)	Tennessee	3.2	(AA)
Pennsylvania	3.1	8.7	Texas	7.1	8.9
South Carolina	2.0	(BB)	Washington	18.6	12.0
Tennessee	7.9	(CC)	Wisconsin	3.5	3.5
Texas	13.2	7.7	24912, TREATED WOOD POLES, PILES, AND POSTS		
Washington	8.1	2.9	United States	461.1	305.5
Wisconsin	2.4	3.2	Alabama	41.6	29.7
24412, WOODEN BOX AND CRATE SHOOK			Arkansas	26.0	20.0
United States	156.2	127.0	California	17.3	29.4
California	60.4	48.6	Florida	27.3	12.9
Florida	3.1	5.1	Georgia	61.1	32.5
Indiana	3.6	2.3	Idaho	9.1	7.4
Michigan	6.0	4.7	Louisiana	19.0	9.0
New Jersey	3.7	(AA)	Minnesota	13.4	10.2
			Mississippi	43.7	23.9
			Montana	4.6	3.0

See footnotes at end of table.

Table 6b. Product Classes—Value of Shipments by All Producers for Specified States: 1982 and 1977—Con.

[Million dollars. Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in table 2. Also, product classes are not shown if they are miscellaneous or "not specified by type" classes. Statistics for some States are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1982. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Product class and geographic area	1982 value of product shipments	1977 value of product shipments	Product class and geographic area	1982 value of product shipments	1977 value of product shipments
24912, TREATED WOOD POLES, PILES, AND POSTS—Con.			24992, CORK AND CORK PRODUCTS		
North Carolina	21.0	13.9	United States	40.9	32.8
Oklahoma	11.3	4.3	California	2.7	(NA)
Oregon	30.6	23.5			
Texas	33.4	18.1	24995, PREFINISHED PARTICLEBOARD AND MEDIUM FIBERBOARD (MDF) MADE FROM PURCHASED PARTICLEBOARD AND MDF		
Washington	32.7	22.5	United States	110.3	84.9
Wisconsin	2.2	(AA)	California	9.2	(NA)
			Wisconsin	6.3	(NA)
24913, OTHER TREATED WOOD PRODUCTS					
United States	617.4	418.3	24996, HARDBOARD PRODUCTS MADE FROM OWN HARDBOARD		
Alabama	44.2	30.0	United States	558.3	508.0
Arkansas	33.5	12.3	Oregon	53.0	57.7
California	13.1	18.9	Texas	25.0	(EE)
Florida	19.7	22.2			
Georgia	47.0	25.1	24998, HARDBOARD PRODUCTS MADE FROM PURCHASED HARDBOARD		
Illinois	14.6	16.6	United States	148.1	171.3
Indiana	18.8	12.1	California	19.2	12.6
Kentucky	13.9	(AA)	North Carolina	17.5	(FF)
Louisiana	20.6	12.9	Wisconsin	9.0	3.6
Maryland	4.9	(BB)			
Minnesota	8.4	8.1	2499A, MISCELLANEOUS WOOD PRODUCTS		
Mississippi	44.0	47.3	United States	1 199.4	921.0
Missouri	6.2	(CC)	Alabama	26.9	(NA)
North Carolina	41.7	6.4	Arizona	6.6	(NA)
Ohio	5.9	(EE)	Arkansas	7.7	(NA)
Oregon	16.8	14.0	California	197.1	(NA)
Pennsylvania	25.4	24.7	Colorado	2.0	(NA)
South Carolina	48.6	43.4	Connecticut	16.0	(NA)
Tennessee	20.1	(EE)	Florida	13.8	(NA)
Texas	52.5	24.0	Georgia	17.7	(NA)
Virginia	57.4	16.1	Idaho	2.9	(NA)
Washington	7.4	9.7	Illinois	24.7	(NA)
West Virginia	12.4	(BB)	Indiana	36.5	(NA)
Wisconsin	7.3	(CC)	Iowa	13.6	(NA)
			Kentucky	21.8	(NA)
24919, CONTRACT WOOD PRESERVING			Maine	122.3	(NA)
United States	94.9	68.6	Massachusetts	24.7	(NA)
Alabama	4.0	2.6	Michigan	46.9	(NA)
Florida	5.1	2.5	Minnesota	21.4	(NA)
Georgia	4.7	2.5	Mississippi	30.9	(NA)
Mississippi	2.0	.7	Missouri	26.0	(NA)
Missouri	6.7	(BB)	New Hampshire	25.4	(NA)
Oregon	3.8	2.1	New Jersey	8.7	(NA)
Texas	7.2	4.4	New Mexico	2.1	(NA)
Washington	11.7	4.6	New York	78.3	(NA)
Wisconsin	4.4	(AA)	North Carolina	84.3	(NA)
			Ohio	42.2	(NA)
24991, MIRROR AND PICTURE FRAMES			Oklahoma	2.8	(NA)
United States	505.5	314.6	Oregon	29.2	(NA)
Arkansas	17.6	(EE)	Pennsylvania	33.5	(NA)
California	85.6	49.7	Rhode Island	2.8	(NA)
Florida	2.5	.9	South Carolina	7.9	(NA)
Georgia	21.1	6.7	Tennessee	24.2	(NA)
Illinois	95.1	88.4	Texas	39.7	(NA)
Indiana	2.8	(BB)	Vermont	24.9	(NA)
Massachusetts	36.2	(FF)	Virginia	10.7	(NA)
Michigan	6.0	11.0	Washington	25.9	(NA)
Mississippi	18.6	21.4	Wisconsin	59.8	(NA)
New Jersey	16.4	14.7			
New York	35.5	28.2			
North Carolina	31.0	3.9			
Ohio	5.9	(CC)			
Texas	30.2	1.2			
Virginia	19.6	8.9			

Note: For 1977, the following value ranges (in million dollars) substitute for actual figures withheld to avoid disclosing data for individual companies: AA—less than \$2.0 but not 0; BB—\$2.0 to \$4.9; CC—\$5.0 to \$9.9; EE—\$10.0 to \$19.9; FF—\$20.0 to \$49.9; GG—\$50.0 or more.

Table 6c. Product Classes—Value Shipped by All Producers: 1982 and Earlier Years

[Million dollars. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

1982 product code	Product class	1982	1981 ¹	1980 ¹	1979 ¹	1978 ¹	1977	1972	1967
2441- 24411 24412 24410	Nailed wood boxes and shook ----- Nailed or lock-corner wooden boxes ----- Wooden box and crate shook ----- Nailed wood boxes and shook, n.s.k. -----	314.6 109.0 156.2 49.4	291.8 151.0 104.3 36.5	299.3 158.4 105.1 35.8	316.9 171.3 117.3 28.3	279.6 92.7 142.9 (S)	265.3 93.8 127.0 44.5	232.8 86.5 100.0 46.3	255.3 111.9 109.1 34.3
24480	Pallets and skids -----	969.7	1 089.1	1 101.6	1 079.1	886.8	642.9	287.4	187.0
24490	Wood containers, n.e.c. -----	295.6	336.7	305.2	264.4	268.5	235.3	218.7	236.6
2491- 24912 24913 24919 24910	Wood preserving ----- Treated wood poles, piles, and posts ----- Other treated wood products ----- Contract wood preserving ----- Wood preserving, n.s.k. -----	1 325.0 461.1 617.4 94.9 151.6	1 280.6 509.8 508.0 126.5 136.3	1 289.1 510.8 560.2 110.9 107.2	1 177.1 448.3 526.0 93.3 109.6	1 097.1 387.6 533.3 92.6 83.7	892.2 305.5 418.3 68.6 99.8	461.4 394.3 29.1 38.0	327.5 284.5 28.7 14.3
24920	Particleboard -----	553.7	558.2	529.2	568.4	655.9	476.5	286.2	89.1
2499- 24991 24992 24993 24995 24996 24998 2499A 24990	Wood products, n.e.c. ----- Mirror and picture frames ----- Cork and cork products ----- Medium density fiberboard (MDF) ----- Prefinished particleboard and medium density fiberboard (MDF) made from purchased particleboard and MDF ----- Hardboard products made from own hardboard ----- Hardboard products made from purchased hardboard ----- Miscellaneous wood products ----- Wood products, n.e.c., n.s.k. -----	3 300.7 505.5 40.9 144.7 110.3 558.3 148.1 1 199.4 593.6	3 308.3 570.0 53.7 2128.1 (NA) 529.8 166.7 (NA) 540.2	3 046.5 457.2 37.3 2120.6 (NA) 489.8 176.4 (NA) 543.5	3 161.2 463.6 44.7 2119.1 (NA) 551.5 222.4 (NA) 596.8	2 667.9 333.2 36.8 2113.2 (NA) 547.7 177.9 (NA) (S)	2 488.7 314.6 32.8 284.2 284.9 508.0 171.3 921.0 372.0	1 479.1 173.0 18.1 258.5 701.6 327.9	905.3 115.7 20.5 159.1 464.8 145.2

¹Figures are estimates derived from a representative sample of manufacturing establishments canvassed in annual survey of manufactures and, therefore, may differ from results that would be obtained from a complete canvass of all manufacturing establishments. Standard errors associated with estimates are published in annual survey of manufactures volumes for this period.

²For 1977 through 1981, prefinished medium density (MDF) made from purchased MDF was included with product class 24993.

Table 7. Materials Consumed by Kind: 1982 and 1977

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For further explanation, see Cost of Materials in appendix. For meaning of abbreviations and symbols, see introductory text]

1982 material code	Material	1982			1977		
		Consumption of materials received from other establishments		Materials made and consumed in same plant (quantity)	Consumption of materials received from other establishments		Materials made and consumed in same plant (quantity)
		Quantity ¹	Delivered cost (million dollars)		Quantity ¹	Delivered cost (million dollars)	
	INDUSTRY 2441, NAILED WOOD BOXES AND SHOOK						
	Materials, containers, and supplies -----	(X)	145.4	(X)	(X)	129.4	(X)
241111	Logs, bolts, and unsliced flitches: Hardwood ----- mil ft (log scale) -----	26.2 (D)	4.3 (D)	(D) (D)	(S) (S)	3.4 8.5	1 -
241112	Softwood ----- do -----	(S)	8.4	(D)	*77.6	11.3	13.0
242110	Rough lumber: Hardwood ----- mil bd ft -----	(S)	33.6	2.0	72.9	13.2	4.1
242121	Softwood ----- do -----	(D)	(D)	(X)	42.9	6.6	(X)
242117	Dressed lumber: Hardwood ----- do -----	108.4 (X)	17.0 14.4	(X) (X)	*95.4 (X)	15.9 6.6	(X) 1.3
242128	Softwood ----- do -----	(X)	14.4	(X)	(X)	6.6	(X)
243056	Plywood, hardwood and softwood -----	(X)	15.3	(X)	(X)	29.7	(X)
970099	All other materials and components, parts, containers, and supplies -----	(X)	50.5	(X)	(X)	34.2	(X)
971000	Materials, containers, and supplies, n.s.k. ² -----	(X)					
	INDUSTRY 2448, WOOD PALLETS AND SKIDS						
	Materials, containers, and supplies -----	(X)	540.7	(X)	(X)	338.6	(X)
241111	Logs, bolts, and unsliced flitches: Hardwood ----- mil ft (log scale) -----	(S) (S)	33.9 2.5	(S) (D)	(S) (S)	22.9 3.0	(NA) (NA)
241112	Softwood ----- do -----	(S)	8.4	(D)	*77.6	11.3	13.0
242110	Rough lumber: Hardwood ----- mil bd ft -----	*735.6 (S)	101.1 21.4	(D) (D)	(S) (S)	81.2 22.1	(NA) (NA)
242121	Softwood ----- do -----	**146.8 (X)	25.7 38.3	(X) (X)	**94.7 (X)	14.2 28.5	(X) (X)
242117	Dressed lumber: Hardwood ----- do -----	**321.8 (X)	12.0	(X)	284.6 (X)	5.6	(X)
242128	Softwood ----- do -----	(X)	34.2	(X)	(X)	28.8	(X)
243056	Plywood, hardwood and softwood -----	(X)	271.6	(X)	(X)	132.3	(X)
970099	All other materials and components, parts, containers, and supplies -----	(X)					
971000	Materials, containers, and supplies, n.s.k. ² -----	(X)					

See footnotes at end of table.

Table 7. **Materials Consumed by Kind: 1982 and 1977—Con.**

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For further explanation, see Cost of Materials in appendix. For meaning of abbreviations and symbols, see introductory text]

1982 material code	Material	1982			1977		
		Consumption of materials received from other establishments		Materials made and consumed in same plant (quantity)	Consumption of materials received from other establishments		Materials made and consumed in same plant (quantity)
		Quantity ¹	Delivered cost (million dollars)		Quantity ¹	Delivered cost (million dollars)	
	INDUSTRY 2449, WOOD CONTAINERS, N.E.C.						
	Materials, parts, and supplies -----	(X)	158.7	(X)	(X)	122.9	(X)
241111	Logs, bolts, and unsliced flitches: Hardwood ----- mil ft (log scale) ..	74.3	13.4	(D)	110.1	16.5	(S)
241112	Softwood ----- do ..	28.7	5.0	(D)	37.6	4.2	(S)
242110	Rough lumber: Hardwood ----- mil bd ft ..	**214.1	28.1	16.6	191.6	26.7	(S)
242121	Softwood ----- do ..	(S)	3.2	(D)	31.6	3.8	(S)
242117	Dressed lumber: Hardwood ----- do ..	*19.4	4.0	(X)	20.1	2.9	(X)
242128	Softwood ----- do ..	**15.8	2.5	(X)	**12.8	2.2	(X)
243056	Plywood, hardwood and softwood -----	(X)	5.3	(X)	(X)	(⁹)	(X)
243540	Veneer: Hardwood ----- mil sq ft (surf meas) ..	*382.6	13.8	(D)	29.1	8.5	(S)
243640	Softwood ----- mil sq ft (1 in. basis) ..	(S)	6.8	16.3	(S)	6.8	(S)
970099	All other materials and components, parts, containers, and supplies -----	(X)	52.6	(X)	(X)	37.0	(X)
971000	Materials, parts, and supplies, n.s.k. ² -----	(X)	23.4	(X)	(X)	14.3	(X)
1982 material code	Material	1982		Delivered cost (million dollars)	1977		Delivered cost (million dollars)
		Quantity ¹			Quantity ¹		
	INDUSTRY 2491, WOOD PRESERVING						
	Materials, parts, and supplies -----	(X)		891.2	(X)		589.8
241109	Treated in same establishment: Poles, piling, and other round or hewn wood products -----	(X)		194.4	(X)		122.1
242110	Rough lumber, including sawn ties: Hardwood ----- mil bd ft ..	*691.1		132.7	606.9		99.2
242121	Softwood ----- do ..	*630.7		171.3	495.3		109.0
286551	Consumed in same establishment: Creosote oil ----- mil gal ..	66.2		79.4	*90.3		58.9
291108	Petroleum solvents ----- do ..	*27.7		28.3	45.3		20.2
286915	Pentachlorophenol ----- mil lb ..	**57.9		26.8	41.1		16.1
281902	Water-born salts ----- do ..	*24.5		30.2	14.0		11.1
280015	Flame retardants ----- do ..	(S)		8.4	*9.7		3.6
970099	All other materials, components, parts, containers, and supplies -----	(X)		67.4	(X)		45.4
971000	Materials, parts, and supplies, n.s.k. ² -----	(X)		152.3	(X)		104.2
	INDUSTRY 2492, PARTICLEBOARD						
	Materials, parts, and supplies -----	(X)		293.1	(X)		213.0
241111	Logs, bolts, and unsliced flitches: Hardwood ----- mil ft (log scale) ..	(D)		(D)	(D)		(D)
241112	Softwood ----- do ..	(D)		(D)	16.0		4.1
242016	Chips, slabs, edgings, sawdust, and other wood waste, except planer shavings ----- 1,000 s tons ..	(S)		30.3	1 630.6		16.2
242017	Planer shavings ----- do ..	*2 433.4		65.8	4 378.1		43.9
282141	Urea and melamine resins ----- mil lb (dry basis) ..	675.5		76.8	*922.4		77.1
282142	Phenolic and other tar acid resins ----- do ..	(S)		14.1	(S)		10.9
282108	All other plastics resins consumed in the form of granules, pellets, powders, liquids, etc., but excluding sheets, rods, tubes, and shapes ----- do ..	(S)		8.5	(D)		(D)
970099	All other materials and components, parts, containers, and supplies -----	(X)		75.7	(X)		48.3
971000	Materials, parts, and supplies, n.s.k. ² -----	(X)		2.2	(X)		2.4
	INDUSTRY 2499, WOOD PRODUCTS, N.E.C.						
	Materials, containers, and supplies -----	(X)		1 444.5	(X)		1 100.1
241111	Logs, bolts, and unsliced flitches: Hardwood ----- mil ft (log scale) ..	(S)		30.0	*229.1		35.8
241112	Softwood ----- do ..	(S)		12.8	*67.7		11.1
242110	Rough lumber: Hardwood ----- mil bd ft ..	(S)		36.7	**123.2		43.9
242121	Softwood ----- do ..	(S)		49.3	(S)		42.6
242117	Dressed lumber: Hardwood ----- do ..	(S)		30.2	**76.6		21.8
242128	Softwood ----- do ..	(S)		47.4	**243.3		43.0
242620	Hardwood dimension and parts, excluding furniture frames Chips, slabs, edgings, shavings, sawdust, and other wood waste ----- do ..	(S)		27.2	**27.5		15.9
241131	Pulpwood ----- 1,000 cords of 128 cu ft ..	(X)		69.7	(X)		34.0
		(S)		15.8	725.1		31.9

See footnotes at end of table.

Table 7. Materials Consumed by Kind: 1982 and 1977—Con.

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For further explanation, see Cost of Materials in appendix For meaning of abbreviations and symbols, see introductory text]

1982 material code	Material	1982		1977	
		Quantity ¹	Delivered cost (million dollars)	Quantity ¹	Delivered cost (million dollars)
	INDUSTRY 2499, WOOD PRODUCTS, N.E.C.—Con.				
243510	Plywood:				
	Hardwood ----- mil sq ft				
243601	Softwood ----- (surf meas)---	*32.3	11.2	(X)	(*)
	----- mil sq ft (3/8				
249960	Hardboard (wood fiberboard) ----- in. basis)---	41.6	12.5	(X)	(*)
	----- mil sq ft (1/8				
249970	Medium density fiberboard (MDF) ----- in. basis)---	*604.8	64.4	*746.6	61.6
	----- mil sq ft (3/4				
249200	Particleboard ----- in. basis)---	**26.7	8.0	(X)	(*)
285101	Paints, varnishes, lacquers, shellacs, japans, enamels, and ----- do---	**133.6	26.9	**366.4	38.2
	allied products ----- 1,000 gal---	**4 967.7	37.3	7 475.5	40.2
289100	Adhesives and sealants ----- mil lb---	(S)	10.6	*16.7	3.9
282141	Urea and melamine resins ----- mil lb				
	(dry basis)---	**212.4	25.7	*103.3	12.4
282142	Phenolic and other tar acid resins ----- do---	83.0	25.6	178.3	25.6
282108	All other plastics resins consumed in the form of granules, pellets, powders, liquids, etc., but excluding sheets, rods, tubes, and shapes ----- mil lb---	*41.7	13.0	(S)	12.7
970099	All other materials and components, containers, and supplies -----	(X)	373.2	(X)	*356.2
971000	Materials, containers, and supplies, n.s.k. ² -----	(X)	517.0	(X)	269.3

¹For some establishments, data have been estimated from central unit values which are based on quantity-cost relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: * 10 to 19 percent estimated; ** 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by (S).

²Total cost of materials of establishments that did not report detailed materials data, including establishments that were not mailed a form.

³For 1977, material codes 243510, 243601, 249970 were included with material code 970099.

⁴For 1977, extruded type particleboard was included in product code 24920 00.

⁵For 1977, extruded type particleboard was included in product code 24920 00.

APPENDIX A.

Explanation of Terms

This appendix is in two sections. Section 1 includes items which were requested of all establishments that were mailed census of manufactures forms including annual survey of manufactures (ASM) forms. Note that this section also includes several items (number of establishments and companies, value added, classes of products, and specialization and coverage ratios) that were not included on the report forms but were derived from information collected on the forms. Section 2 covers supplementary items that were requested only from establishments included in the ASM sample. Results of the supplementary ASM inquiries are included in tables 3c and 3d of this report.

SECTION 1. ITEMS COLLECTED OR DERIVED BASED ON ALL CENSUS OF MANUFACTURES (INCLUDING ASM) REPORT FORMS

Number of establishments and companies—As discussed in the Introduction, a separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operates at different physical locations, even if the individual locations are producing the same line of goods, a separate report was requested for each location. If the company operates in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on the number of custodial employees, capital expenditures, inventories, or any shipments from inventories during the portion of the year the plant was in operation.

In this report, data are shown for establishments in operation at any time during the year. A comparison with the number of establishments in operation at the end of the year will be provided in the Introduction to Part 1 of the General Summary subject report.

Employment and related items—The regular report forms requested separate information on production workers as of a payroll period for each quarter of the year and on other employees as of the payroll period which included the 12th of March.

All employees—This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period ending nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production workers—This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All other employees—This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It includes sales (including driver salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office function, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment who are engaged in the construction of major additions or alterations to the plant and who are utilized as a separate work force.

In addition to reports sent to operating manufacturing establishments, information on employment during the payroll period which included March 12 and annual payrolls was also requested of auxiliary units (e.g., administrative offices, warehouses, and research and development laboratories) of multiestablishment companies. However, these figures are not included in the totals for individual industries shown in this report. They are included in the general summary and geographic area reports and in the final bound volumes as a separate category.

Payrolls—This item includes the gross earnings of all employees on the payroll of operating manufacturing establishments paid in the calendar year 1982. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers

of corporations, but excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payroll of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' Social Security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' supplemental labor costs, both those required by Federal and State laws and those incurred voluntarily or as part of collective bargaining agreements. (Supplemental labor costs are explained later in this appendix.)

As in the case of employment figures, the payrolls of separate auxiliary units of multiestablishment companies are not included in the totals for individual industries or industry groups.

Production-worker hours—This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

Cost of materials—This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (1) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year, (2) electric energy purchased, (3) fuels consumed for heat, power, or the generation of electricity, (4) work done by others on materials or parts furnished by manufacturing establishments (contract work), and (5) products bought and resold in the same condition. (See discussion of duplication of data below.)

Specific materials consumed—In addition to the total cost of materials, which every establishment was required to report, information was also collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information on the specific materials consumed is shown in table 7 if appropriate to the industry. Establishments consuming less than a specified amount (usually \$10,000) of a specific material were not requested to report consumption of that material separately. Also, the cost of materials for the small establishments for which either administrative records or short forms were used was imputed as "not specified by kind." (See the Introduction for the importance of administrative records in the industry.)

Value of shipments—This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and resold without further

processing. Included are all items made by or for the establishments from materials owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of "all other costs" (including company overhead) and profit. (See discussion of duplication of data below.)

Individual products—As in previous censuses, data were collected for almost all industries on the quantity and value of individual products shipped. In the 1982 census program, information was collected on the output of approximately 11,000 individual product items. The term "product," as used in the census of manufactures, represents the finest level of detail for which output information was requested. Consequently, it is not necessarily synonymous with the term "product" as used in the marketing sense. In some cases it may be much more detailed and, in other cases, it is more aggregative. For example, "pharmaceutical preparations" was distributed into over 100 items; whereas, "motor gasoline" was reported as a single item.

Approximately 6,000 of the product items were listed separately on the 1982 census report forms. Data for about 5,000 products were obtained in the monthly, quarterly, or annual surveys comprising the Current Industrial Reports series of the Census Bureau. Totals for the year 1982 for these items, as derived from the commodity surveys, are shown in the "products shipped" table (table 6a) together with the tieline total value collected in the census for reconciliation purposes.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1977 information is presented for most products.

Typically, both quantity and value of shipments information was collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers was also collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant was collected. Typically, the information on production was also collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

Classes of products—To summarize the product information, the separate products were aggregated into classes of products that, in turn, were grouped into all primary products of each industry. The code structure used is a seven-digit number for the

individual product, a five-digit number for the class of product, and a four-digit number for the total primary products in an industry. (See Introduction, Industry Classification of Establishments, for application of the coding structure to the assignment of SIC codes for establishments.)

In the 1982 census, the 11,000 products were grouped into approximately 1,500 separate classes on the basis of general similarity of manufacturing processes, types of materials used, and the like. However, the grouping of products was affected by the economic significance of the class and, in some cases, dissimilar products were grouped because the products were not sufficiently significant to warrant separate classes.

Duplication in cost of materials and value of shipments—The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication, since the products of some industries are used as materials by others. With some important exceptions, such as for motor vehicles and parts, this duplication is not significant at the four-digit industry level. However, it is significant at the two-digit and three-digit industry group level because these totals often include industries that represent successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the "Food" group and the addition of pulp mills to paper mills in the "Paper and Allied Products" group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the census of manufactures.

Value added by manufacture—This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning- and end-of-year inventories.

Because of the change in instructions for reporting inventories for 1982, the 1982 figure for value added is not strictly comparable to prior-year data. This is explained more fully in the inventories section below.

"Value added" avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

New and used capital expenditures—For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their new expenditures for (1) permanent additions and major alterations to manufacturing establishments, and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

The totals for new expenditures exclude that portion of expenditures leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under

contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Also excluded are expenditures for used plant and equipment (although reported in the census), expenditures for land, and cost of maintenance and repairs charged as current operating expenses.

Manufacturers were also requested to report the value of all used buildings and equipment purchased during the year at the purchase price. For any equipment or structure transferred to the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. Furthermore, if the establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported under used capital expenditures.

Total expenditures for used plant and equipment is a universe figure; i.e., it is collected on all census forms. However, the breakdown of this figure between expenditures for used buildings and other structures and expenditures for used machinery and equipment is collected only on the ASM form and is subject to sampling error (see table 3d). The data for total new capital expenditures, new building expenditures, and new machinery expenditures, as well as the data for total used expenditures, are shown in both tables 3a and 3d. The figure in table 3a is a census universe total and may differ from the results of the ASM sample shown in table 3d. Since the figures in table 3d are subject to sampling error, they are not considered as reliable as the universe figures.

End-of-year inventories—Respondents were asked to report their 1981 and 1982 end-of-year inventories at cost or market. Effective with the 1982 Economic Censuses, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). In 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Because of this change in reporting instructions, the 1982 data for inventories and value added by manufacture included in the tables of this report are not comparable to the prior-year data shown in table 1a of this report and in historical census of manufactures and annual survey of manufactures publications. Inventories and value added data estimated on a basis comparable to the historical data, using the reported information for 1982, are shown in footnote 4 of table 1a. However, the end-of-1981 figure shown in this footnote may differ from the corresponding value published as part of the 1981 Annual Survey of Manufactures.

This difference at the four-digit SIC level is due primarily to the effects of industry shifts. As described in the Industry Classification of Establishments section of the Introduction, ASM noncertainty plants are allowed to shift from one industry to another in a census year; whereas, they are "frozen" in a particular industry in ASM years. Other explanations for this difference include the effects of sampling and processing errors and revisions to end-of-1981 data reported by respondents.

In using inventory data by stage of fabrication for "all industries" and at the two-digit industry level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by another establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw

materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for individual industries, industry groups, and "all manufacturing," which are aggregates of figures reported by establishments in specified industries.

Specialization and coverage ratios—These items are not collected on the report forms but are derived from the data shown in table 5b. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

As noted in the Introduction, an establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary

products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in tables 1a through 5a and data on product shipments shown in tables 6a through 6c.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

SECTION 2. ITEMS COLLECTED ONLY ON ASM REPORT FORMS

Supplemental labor costs—Supplemental labor costs are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees. While the excluded items do benefit employees and all or part of their cost generally is similar to the items covered in the ASM labor costs statistics, accounting records do not generally provide reliable figures on net employee benefits of these types.

Cost of purchased services—ASM establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, and communication services. Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment, such as painting, roof repairs, replacing parts, and overhauling equipment. Such payments made to other establishments of the same company and for repair and maintenance of any leased property are also included. Extensive repairs or reconstruction that were capitalized are considered capital expenditures for used buildings and machinery and are, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force are also excluded.

The response coverage ratio shown in table 3d for each of the three types of purchased services listed above is a measure of the extent to which respondents reported for each item. It is derived for each item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight; see section 3) for those ASM establishments that reported the

specific inquiry to the weighted total employment for all ASM establishments classified in the industry.

Electric energy used for heat and power—Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy and quantity of generated-less-sold electric energy were collected only on the ASM forms. The cost and quantity of purchased electric energy represent the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

Beginning- and end-of-year depreciable assets—The data encompass all fixed depreciable assets on the books of establishments at the beginning and at the end of the year. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are non-depreciable capital assets, including inventories and intangible assets, such as patent rights and royalties. Also excluded are land and depletable assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year, rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress. In addition, respondents were requested to make certain that assets at the beginning of the year plus new and used capital expenditures, less retirements, equalled assets at the end of the year.

New and used capital expenditures—The data for total new capital expenditures, new building expenditures, new machinery expenditures, and total used capital expenditures are collected on all census forms. However, the breakdown between expenditures for used buildings and other structures and expenditures for used machinery and equipment is collected only on the ASM form. (See further explanation on capital expenditures in section 1.)

Breakdown of new capital expenditures for machinery and equipment—ASM establishments were requested to separate their capital expenditures for new machinery and equipment into (1) automobiles, trucks, etc., for highway use, (2) computers and peripheral data processing equipment, and (3) all other.

The category "automobiles, trucks, etc., for highway use" is intended to measure expenditures for vehicles designed for highway use that were acquired through a purchase or lease-purchase agreement. Vehicles normally operating off public highways (vehicles specifically designed to transport materials, property, or equipment on mining, construction, logging, and petroleum development projects) are excluded from this item.

The "not specified by kind" or n.s.k. item for expenditures for new machinery and buildings, shown in table 3d, represents the total machinery and equipment expenditures for establishments that did not break down their expenditures for the three specific categories. This means that for most industries the specific categories are understated.

Retirements—Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during 1982. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent was also requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

Rental payments—This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets, and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company, and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

Depreciation charges—This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

APPENDIX B.

Annual Survey of Manufactures (ASM) Sampling and Estimating Methodologies

DESCRIPTION OF SURVEY SAMPLE

The Annual Survey of Manufactures (ASM) contains two components. The mail portion of the survey is a probability sample of about 55,000 manufacturing establishments selected from a total of about 225,000 establishments. These 225,000 establishments represent all manufacturing establishments of multiunit companies and all single-unit manufacturing establishments with five employees or more tabulated in the 1977 Census of Manufactures. This mail portion is supplemented by a Social Security Administration list of new manufacturing establishments opened after 1977. The individual establishments were defined as the sampling unit for this sample. This is a change from the previous ASM sample when companies were used as the sampling unit. The implication of this change is that the probability of selection of any establishment relates only to the size of the establishment itself and is independent of the size of the company with which the establishment is affiliated. The efficiencies associated with the change to an establishment sample have made it possible to reduce the mail sample panel from 70,000 establishments in 1978 to 55,000 establishments in the current panel.

The nonmail portion of the survey includes all single-unit establishments that were tabulated with less than five employees in the 1977 Census of Manufactures. Although this portion contained approximately 125,000 establishments, it accounted for less than 2 percent of the estimate for total value of shipments at the total manufacturing level. This portion was not sampled; rather, the data for every establishment in this group were estimated based on selected information obtained annually from the administrative records of other Federal agencies. This administrative record information, which includes payroll, total employment, industry classification, and physical location of the establishment, was obtained under special conditions, which safeguard the confidentiality of both tax and census records. Estimates for data for these small establishments were developed using industry averages in conjunction with the administrative information.

The corresponding estimates for the mail and nonmail establishments were added together, along with the adjusted base-year differences as defined in Description of Estimating Procedures below. The remaining description of the survey sample relates only to the mail portion of the ASM sample.

All establishments with 250 employees or more in the 1977 census were included in the survey panel with certainty. These establishments collectively account for approximately 65 percent of the total value of shipments for manufacturing establishments in the 1977 census. Smaller establishments were sampled with probabilities ranging from 1.000 down to 0.005 in accordance with mathematical theory for optimum allocation of a sample.

The probabilities of selection assigned to the smaller establishments were proportional to measures of size determined for each establishment. For establishments included in the 1977 Census of Manufactures, the measure of size depended directly upon each establishment's 1977 product class values and the

historic variability of the year-to-year shipments of each product class. Roughly equivalent measures of size were assigned to postcensus birth establishments based on their industry codes and anticipated payroll and employment.

The method of assigning measures of size was used in order to maximize the precision (that is, minimize the variance of estimates of the year-to-year change) in the value of product class shipments. Implicitly, it also gave weight to differences in employment, value added, and other general statistics, for these are highly correlated with value of shipments. Individual sample selection probabilities were obtained by multiplying each establishment's final measure of size by an overall sampling fraction coefficient calculated to yield a total expected sample size.

The sample selection procedure gave each establishment in the sampling frame an independent chance of selection. This method of independent selection permits the rotation of establishments into and out of a given sample panel without introducing a bias into the survey estimates.

DESCRIPTION OF ESTIMATING PROCEDURES

Most of the ASM estimates for the years 1978-1981 were computed using a modified "difference estimate" formula. For each item, a base-year difference was developed. This base-year difference is equal to the difference between the 1977 census published number for an item total and the linear ASM estimate of the total for 1977. The ASM linear estimate was obtained by multiplying each sample establishment's data by its sample weight (the reciprocal of its probability of selection) and summing the weighted values.

This base-year difference was then adjusted to reflect the estimated growth at the four-digit or, in the case of product classes, five-digit based Standard Industrial Classification (SIC) level from 1977 to the year of the survey; for example, 1981. It should be noted that due to processing constraints, the growth factors lagged one year; i.e., if 1981 is the survey year, they were not based on the estimated growth from 1977 to 1981 but rather the growth from 1977 to 1980. This one-year lag had negligible effect on the estimates, particularly at the total manufacturing level where the adjusted base-year difference accounted for less than 1 percent of the estimate for total value of shipments.

These adjusted base-year differences were then added to the corresponding current-year linear estimates, which include the sum of the estimates for the mail and nonmail establishments, to produce the estimates for the years 1978-1981. Estimates developed by this procedure usually are far more reliable than comparable linear estimates developed from the current sample data alone.

The 1982 sample data included in table 3d were also developed using difference estimates. However, since the universe totals for the census year (1977 or 1982) were not known, a modification of the procedure described above was necessary. For each item in table 3d, except purchased services and breakdown of expenditures for new machinery and equipment (see further description in appendix A, section 2), linear

estimates of the publication totals from the ASM mail sample were adjusted by the difference between imputed census totals and the corresponding ASM mail sample estimates of these imputed totals. These imputed totals are obtained by applying industry average ratios to control item values at the establishment level. For example, an imputed total beginning assets figure is obtained by multiplying each establishment's total value of shipments by the industry (four-digit SIC) average for the ratio of beginning assets to shipments.

Separate estimates for the nonmail establishments were not developed. However, their contribution to the publication estimates is reflected in the difference adjustment.

The method of inventory valuation percentages included in table 3c was developed using both complete census information and ASM estimates. The percentages for the four major categories (LIFO, non-LIFO, valuation method not reported, and LIFO reported without associated value and reserve) were derived from the complete census and correspond to the values included in table 3d. The percentages for the specific non-LIFO methods of valuations (FIFO, average cost, specific costs, etc.) are ratio estimates developed from the ASM in conjunction with the census universe estimate for the total of the non-LIFO methods.

QUALIFICATIONS OF THE DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sampled lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the differences between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of the estimates.

The particular sample selected for the ASM is one of a large number of similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretical, comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected statistics in this report. Except for table 3c, they are presented in the form of relative standard errors, the standard errors divided by the estimated values to which they refer. In table 3c, "absolute" standard errors of the estimates are presented.

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete coverage value would be included in the range:

1. From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

2. From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.

3. From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown as 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total and about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors would also occur if a complete canvass were to be conducted under the same conditions as the survey.

Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected in the course of the Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or only moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown.

The concept of complete coverage under the conditions prevailing for the ASM is not identical to the complete coverage of the census of manufactures, as the censuses have been conducted. Nearly all types of operational errors that affect the ASM also occur in the censuses. The ASM and the censuses, are conducted under quite different conditions, and operational errors can be better controlled in the ASM than in the censuses. As a result, for many of the census figures, the errors are of the same order of size as the total errors of the corresponding annual survey estimates. The differences between the census and ASM operating conditions also disturb, to some degree, the comparability of the ASM and census data.

Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be of limited reliability. However, the figure may be combined with higher-level totals, creating a broader aggregate, which then may be of acceptable reliability.

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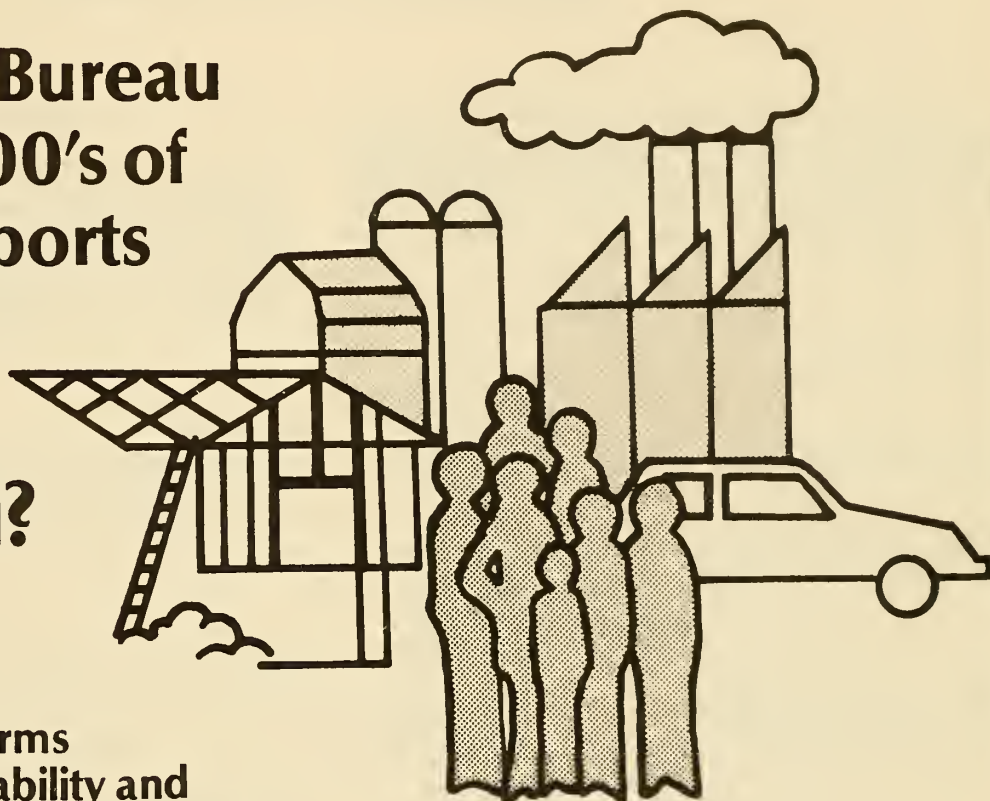
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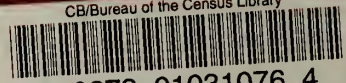
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